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Original Articles

THE DIGESTION OF THE PROTEIDS OF COW'S MILK IN INFANCY.

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The proteids in cow's milk give rise to no digestive or nutritive disturbances in the feeding of young infants. If the foregoing statement be a fact, and I am convinced that it is, then the theories and practices that now hold the American profession with regard to the artificial feeding of infants must be radically altered. For years the idea of proteid indigestibility has existed, based principally on some crude test-tube experiments and the misappreciation of certain appearances of the baby's stools, and this error has lived because none challenged the hypothesis, but everybody accepted the casein indigestion as an easy explanation of the difficult digestion of cow's milk during infancy. However, such a mass of incontrovertible evidence has been presented by Escherich, Heubner and Rubner, Budan, Finkelstein and more especially by Czerny and Keller, that one must now admit that such a thing as the proteid indigestion of cow's milk is untenable.

INDIGESTIBILITY OF PROTEIDS NOT TENABLE.

The theories of the difficult digestion of cow's proteid were based on the following hypotheses, as stated by Czerny:

Conclusions drawn from the firm coagulum that forms in a test-tube when rennet is added to cow's milk, and the greater amount of proteid in cow's milk than in human milk; the presence of curds in the stools; mechanical irritation by hard clots, causing colic, etc.; the "foreign" albumin of cow's milk, a toxic irritant, and the putrefaction of proteid remnants.

When rennet is added to cow's milk in a test-tube a firm clot forms only when the test-tube is allowed to stand without agitation. If the tube be sealed and slowly inverted so as to imitate, even though crudely, the churning movements of the stomach, a fine flocculent precipitate is formed, and if one removes cow's milk from a child's stomach with a stomach tube a similar flocculent precipitate is obtained. If any conclusion can be drawn from the behavior of cow's milk with rennet, it is such as would not speak for its indigestibility. The so-called curds in the bowel movement of infants, by which are meant the common whitish, yellowish-white, or yellowish lumps, are not proteid material, but are fats or fatty soaps; rarely are they inspissated mucus or clumps of bacteria. Chemical examination of these masses will reveal their nature, and clinically they can be lessened or caused to disappear from the stools without altering the proteid contents by diminishing or removing the fat from the milk food. In hundreds of experiments in which I have given an undiluted fat-free milk to babies, at times giving more than a quart in 24 hours, never, after careful examination, have I seen curds in the stools.

For such experiments, distinction must be made between skimmed milk and fat-free milk. Fat-free milk, which can be obtained by the centrifugal separation of milk, contains less than 0.5 per cent. of fat, and such a small amount of fat can be disregarded. When milk is skimmed by allowing it to stand in a suitable vessel until the cream rises and is skimmed away, or even siphoning the lower milk, the amount of fat in such milk is often more than 1 per cent., and such skimmed milk may occasion small, whitish, pin-point masses to appear in the stool when administered to a susceptible infant.

If curds or clots are not formed by the proteids, then no mechanical injury can be produced by the proteids, and the symptom of colic has been absent from the babies fed on proteid-rich, fat-free milk.

Biedert's hypothesis of "injurious food remnants," by which he taught that the casein masses precipitated in the stomach were retained in the gastrointestinal tract where they underwent putrefactive decomposition, and irritated the alimentary mucosa and might precipitate an attack of gastroenterocolitis; Biedert's hypothesis can be refuted by experiments with fat-free milk. It is found on experiment that the proteid content of milk resists bacterial decomposition for a long time. In the stools of many infants fed on proteid-rich, fat-free milk I have never been able to discover the least putridity. In three cases of ulcerative iliocolitis I have fed sterilized, undiluted, fat-free milk and have seen the bowel movements quickly change from lumpy, mucopurulent, bloody, putrid evacuations to smooth, salve-like, yellowish-brown movements devoid of offensive odor.

The hypothesis of Hamberger concerning *art-eigenes* and *art-fremdes* albumin has only a theoretic interest. The harmlessness of the proteid can be demonstrated clinically by its administration to any infant. I have given fat-free, proteid-rich milk to a large number of babies, over 200 in hospital and in private practice; to the premature new-born, to the infants in three cases of ulcerative iliocolitis, and in three cases of hereditary lues, to many atrophic babies, etc., and the result in each case was the same, so that one can state with the assurance of a mathematical demonstration what must follow every time the experiment is made.

In such an experiment as the following give a baby weighing, let us say, seven pounds, from three to four ounces of sterilized, fat-free, undiluted cow's milk every four hours, or five feedings in the 24 hours. The child will present no symptoms of distress, no meteorism, no vomiting of clots, no belching of gas, and its bowel movements will be smooth, soft, salve-like, brownish-yellow, homogenous and without offensive odor. The color of the movement may vary from a very light yellow to brownish-yellow, but with this single variation of color every other condition will be as I have briefly

described. I have made such experiments innumerable times, always with like results. The following cases are reported in more or less detail, illustrating the ease of proteid digestion.

CASE REPORTS.

CASE 1. *Patient.*—Baby A. was admitted to Wesley Hospital when three days old with its mother, who had a severe puerperal infection. The infant had a temperature of 100 F. On admission it weighed 5 pounds 12 ounces. Physical examination was negative.

Treatment.—The infant was given one-half grain of calomel in divided doses and weak barley water for two days. The temperature was then normal and it was given a small amount of milk, which was slowly increased to three ounces in 24 hours. There were free green curdy bowel movements and the milk was discontinued on the ninth day and one ounce of cream given with whey and barley. The food was continued for three days. The stools were increased in number, the curds became more numerous and the weight diminished. The food was changed, and through an error 20 ounces of whole milk was given for one day, when eight very curdy green bowel movements followed. The following day fat-free milk was given and the character of the stools changed immediately. They were soft and yellowish, with no curds. Two days later a number of fine curds were noted in the stool and it was learned that a siphoned milk, which was not fat free, had been used that day. The babe continued to thrive on the diet as shown in the chart. On September 15 one ounce of whole milk was added to the mixture and on the appearance of small curds it was withdrawn. A week later four ounces of whole milk were added to the food. Next the stools became hard and marble-like and whole milk was again withdrawn. Six days after this one ounce of cream was added; after this the bowel movement again became dry and firm and the tongue was coated; then the cream was removed. On the forty-sixth day the child was taken home by the mother in very evident good health, good color, active, eager for its food, no colic, gaining in weight and with clear, salve-like yellowish-brown stools.

Date	September 24	26	29	October 2	5	6	8	9	10	12	15	17	24	26	29	30	November 3	6	14
Cream . . . . . Ozs.				1															
Milk . . . . . Ozs.		1	3		20						1		4			1			
Fat-free milk . . Ozs.						10	8	10	12	18	17	21	13	21	21	19	21	21	
Whey . . . . . Ozs.				8															
Barley water. . . Ozs.	18	9	8	5															
Water . . . . Ozs.		10	9	6		10	8	6	4	6	6		4			1		3	
Milk sugar. . . . Ozs.		½																	
Cane sugar. . . . Ozs.		1	1	1	⅜	⅜	⅜	⅜	⅜	⅜	¾	¾	¾	¾	1	1	¾	1	
No. of feedings	12	10	10	10	10	10	8	8	8	8	8	7	7	7	7	7	7	6	
Amount in ounces . .	1½	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	4	
Fats	0.	0.2	0.6	0.8	4.	0.	0.	0.	0.	0.	0.1	0.	.8	0.	0.	.8	0.	0	
Proteids	0.	0.2	0.6	0.6	4.	2.	2.	2.5	3.	3.	3.	4.	3.	4.	4.	4.	4.	3.5	
Carbohydrates. . . .	3.7	5.6	6.0	7.5	6.	4.7	5.	5.	6.	5.2	6.5	8.	7.3	8.	9.	9.	8.	8	
Total calories, ...	114	148	187	239	485	145	133	151	169	231	288	300	312	300	330	364	300	320	
Energy quotient . . .	25	67	65	85	179	51	47	53	60	82	99	100	100	99	103	120	96	103	
No. of B. movements.	2	4	2	4	6	8	3	2	5	1	1	2	1	2	2	4	3	1	
Weight in pounds*. .	5.12	5.14	6.4	6.0	5.15	6.			6.1	6	6.4	6.6		6.11		6.14	6.15	7	

* Weight is indicated in pounds in ordinary figures, ounces in superior figures.

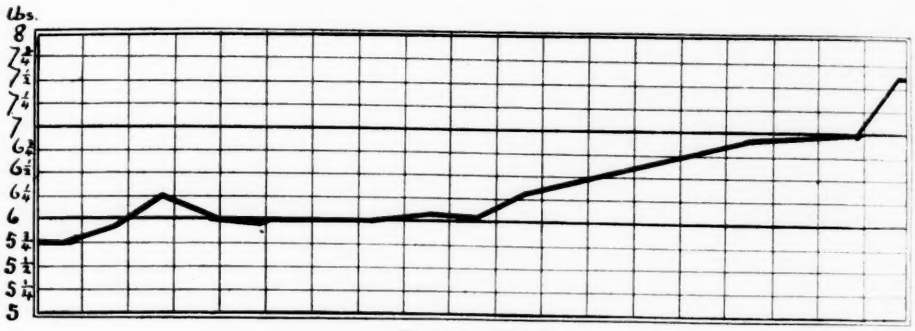

Chart 1.—Weight.

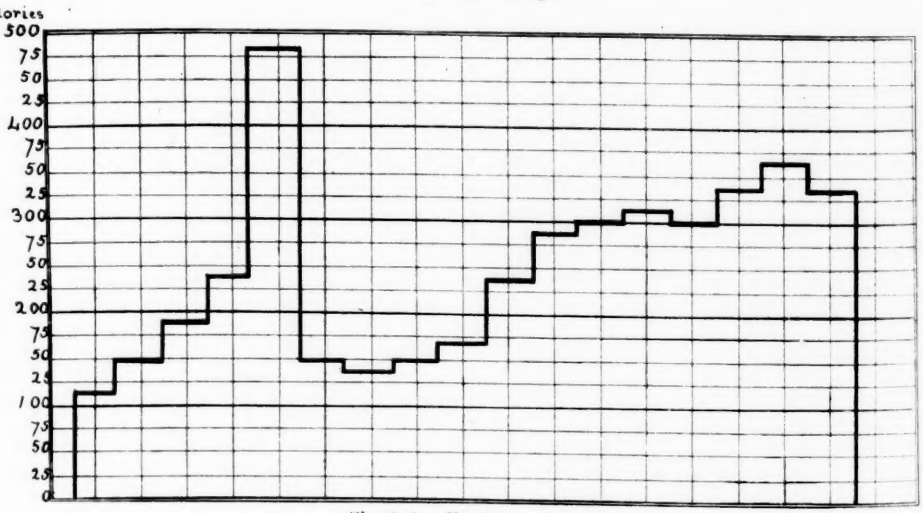

Chart 2.—Food in calories.

Charts 1 and 2 tabulate the food and progress in this case.

CASE 2. *Patient.*—H., male, aged 3 years, was admitted to Wesley Hospital.

History.—There are four children in the family, all well; the father and mother are in good health. The child was breast-fed and had no serious illness until three weeks before admission to hospital, when the present sickness began suddenly with vomiting, high fever and diarrhea. The fever and diarrhea had continued up to the time of admission. The bowel movements were very frequent, from 10 to 20 a day; were very offensive, liquid and contained blood, mucus and pus.

Examination.—The child was in a condition of extreme emaciation and prostration when admitted to the hospital. He weighed 20 pounds. Lying on his back in great apathy, and with deeply sunken eyes, he looked more like a corpse than a living child. He was very dull and exhibited resistance only when disturbed for examination, feeding or changing his diapers. The cervical axillary and inguinal lymph glands were slightly enlarged. The skin was dry and pale, and the tongue was very red and dry, the teeth were covered with dry secretion and the angle of the mouth was fissured. The heart beat was rapid and the muscle tone muffled; there were no other abnormal findings in the chest. The abdomen was sunken, but without muscular rigidity or tenderness. The liver could be felt an inch below the costal arch; the spleen was not palpable. Blood examination revealed 25,000 leucocytes. There was no Widal reaction. The bowel movements were thin, numerous, greenish and slimy; very small in amount, consisting of curds and débris and masses of pus, and were blood streaked. The odor was very offensive.

Treatment.—Details are shown in Chart 2. The child was placed on stimulation, and fat-free milk and arrowroot were ordered every four hours. He took his nourishment only in small amounts and that after persuasion. The following day the stools were examined and found to contain many colon bacilli and cocci, pus, and starch granules. The child vomited several times and rejected his food. On the third day he was fed through a nasal catheter; four ounces of sterilized fat-free milk were given six times in the 24 hours. From this time on there was no vomiting and the character of the bowel movements changed. There were never any curds in the stools while he was taking the fat-free milk even, as seen in the chart, when he was having more than a quart a day. The soft yellow salve-like stools soon replaced the early stools and putridity was absent. On the fifth day in the hospital his temperature became 102+ F. The following morning the explanation of the rise in temperature was found in a red, swollen and tender condition of the right parotid gland; with this exception the improvement was uninterrupted. The additions that were made to the diet are shown in Chart 3 and illustrate the value of determining the energy quotient, in order properly to nourish the child.

Entero-colitis.

	October																November										
Date	15	16	17	18	19	20	21	22	23	24	25	29	27	28	29	30	1	2	3	4	5	6	10	12	16	30
Whole milk. . . . . Ozs.																5	5	5	5	5	5	5	5	10	10
Fat-free milk. . . . . Ozs.	4	4	20	30	30	30	30	30	30	30	30	30	30	30	30	35	35	35	35	35	35	35	35	35	40	40
Arrowroot water. . . . Ozs.	8	8																								
Cane sugar . . . . . Ozs.																½	½	½	½	½	½	½	½	½	½	½
Wheat flour. . . . . Ozs.														2	2	2	2	2	2	2	2	2	2	2	1	1
Quantity. . . . . Ozs.				6	6	6	6	6	6	6	6	6	6	6	6	8	8	8	8	8	8	8	8	10	10	10
No. of Feedings.				5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
No. of B. movements. . . .	?	?	?	?	8	8	8	5	7	4	9	7	2	4	7	5	5	2	5	4	2	2	2	2	3	2
Blood	B	B	B		B	B																				
Pus	P	P	P	P	P	P	P	P	P		P															
Mucus	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M										
Vomiting	V	V	V																							
Total calories.	64	[200	300—											540		655								790	790	
Energy quotient	7	22	33—]											60		72								81	68	
Weight. . . . . Lbs.	20	20		19.15 —]							19.15		19.15							20.4	20.10		21.2	21.5	22	

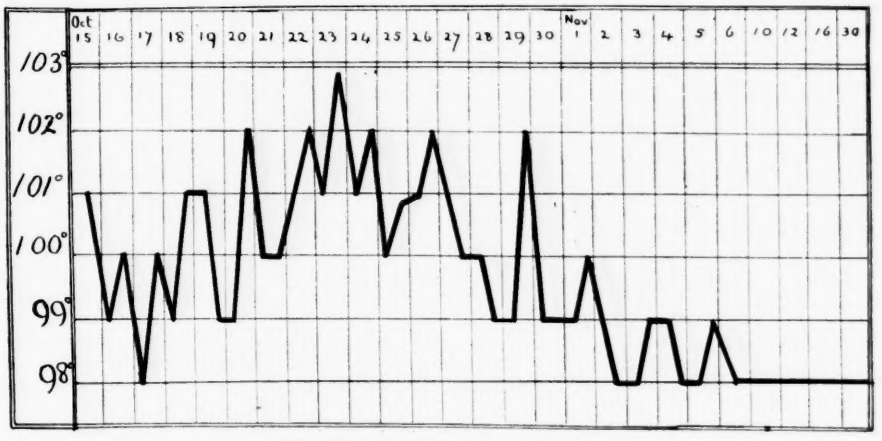

Chart 3.—Temperature in Case 2.

SUMMARY.

A child entering the hospital in a very grave state with a severe ulcerating enterocolitis was fed on a fat-free, proteid-rich diet, without sign of distress or indigestion of this food. This food seemed to have a decidedly beneficial and therapeutic effect in allaying the inflamed bowel and lessening the putridity of the bowel content.

A 10-months-old child, three weeks ago, was taken suddenly ill with ileocolitis. For two weeks the conditions were much like those described in the preceding case. The child was put on fat-free, proteid-rich milk, and is now taking 8 ounces five times a day, or 40 ounces in the 24 hours. The movement was soft, absolutely free from any sign of curd, yellowish in color, salve-like in consistency and inoffensive in odor. The therapeutic result is similar to that in the other cases of ulcerative ileocolitis.

An atrophic child, now in Wesley Hospital, aged 5 months and weighing a half-pound less than he did at birth: that is, 7 pounds; he is taking as food 30 ounces of fat-free, sterilized milk a day. He was admitted to the hospital because his mother was worn out in her efforts to find a food for the child. The baby cried all the time, said the mother. On a fat-free milk, given every four hours, he has gained seven ounces in ten days; has no symptoms of colic and is much more contented. There are never any curds in the stools.

PERCENTAGE SCHEDULES FAULTY.

The former ideas of the nutritive and digestive disturbance that arose in the artificial feeding of infants on cow's milk were based on the hypothesis that the proteid content of cow's milk was difficult to digest and, without demonstrating this, every means were taken to overcome the assumed difficulty. The milk was diluted until the proteids were reduced almost to the vanishing point. The proteids were split by the addition of rennet, and whey containing the "soluble" albumin with cream additions came into popular use. Alkalies, such as bicarbonate of soda or of potash or lime water, were used to diminish the curd coagulum. Cereal decoctions were said to have a similar action. The predigestion of the casein by pepsin or pancreatin was likewise prescribed, and of late we are told that citrate of soda makes proteid digestion easier.

Ludwig F. Meyer says that the difference in the behavior of human and of cow's milk should no longer be sought in the different caseins and their lighter or harder digestibility. The principal difference in the two milks, he says, consists much more in the whey, especially with regard to the contained ferments and inorganic salts.

The fact is we have no single symptom or group of symptoms from which we may conclude that any injury to the infant occurs from the albuminoid material in cow's milk, and with the demonstration of this fact all the methods advocated to aid in the digestion of the proteid are without foundation, are useless and may be harmful. It is not to be understood that this article advocates the feeding of babies on a fat-free or skim-milk diet. The normal baby demands a proportion of fat in its food, and the amount is a problem for individual determination. As mentioned in Dr. Brenneman's paper, the most frequent source of overfeeding is an excessive amount of fat, and the most dangerous foods are the cream mixtures. The cream mixtures give

too much fat and too little proteid. If, as the champions of the percentage method of feeding tell us, "the modification of the proteid is the most important change necessary in cow's milk, for it is the proteid which gives most of the trouble to the infant's digestion," then it must follow, after the demonstration of the innocuousness of cow's proteid, that the percentage method is built on an erroneous idea. Moreover, since the published schedules on the percentage basis exhibit a high degree of overfeeding and do not accurately tell the amount of food that a child is having, there is little, if any, reason at present for the existence of the method.

THE VALUE OF WHOLE MILK MIXTURES.

It may be asked what can be offered in its place, and I should answer the feeding of normal infants on whole milk mixtures, beginning with dilution not to exceed one part of milk to two parts of water and lessening the dilution until whole milk is reached, sometimes from six months to a year; and such whole milk should contain not to exceed from 2 to 3 per cent. of fat rather than 4 per cent., as is present in certified milk.

The baby from the first week should not be fed oftener than every four hours during the day and twice at night, and the amount at each feeding should be enough to satisfy its appetite. Few babies, if fed only every four hours, will take too much food. A check against overfeeding should be applied, however, in every child by estimating the caloric value of the food taken during the 24 hours. The caloric value of the infant's food is a matter of easy calculation.

For a further discussion of the caloric check against overfeeding I refer to the paper by Dr. Brenneman on that subject. It is understood, of course, that the food of the infant should be properly balanced and contain fat, carbohydrates and proteid in due proportion. The food elements, fat, proteid and carbohydrates, are not isodynamic in the sense that metabolism can be properly and continuously provided for on a diet made up entirely of any one or two of these elements. But what this due proportion should be is a matter for study in the individual case and not a part of this paper, except in so far as it points out the harmlessness of cow's milk proteid, and leaves for consideration the importance of a proteid rich diet.

CONCLUSIONS.

1. There is no evidence that the proteid of cow's milk causes any digestive disturbance in the infant.
2. All experiments prove that cow's proteid is easy to digest and resists putrefaction.
3. The methods mentioned above as aids in the digestion of the proteids are without reason.
4. In sterile, fat-free milk we possess an unequaled therapeutic agent in the treatment of the nutritive disorders of infancy.

Ten Laparotomies for Adhesive Peritonitis with Final Cure.—Greiffenhagen relates in the *St. Petersb. med. Wochenschr.* for October 13 the details of a case of chronic peritonitis with recurring lesions in a housemaid of 35, a primipara, finally cured after nephropexy had been done four times and laparotomy ten. The woman had had varioloid and scarlet fever as a child, but otherwise nothing could be discovered to account for the adhesive peritonitis. The appendix, adnexa and other organs were sound. The numerous operations were undertaken principally to relieve the intense recurring pains, without much hope of a permanent cure, but the patient has been in good health for eight years since the last operation. The first symptoms to attract attention were those from wandering kidney.

GLEANINGS FROM FOUR YEARS' EXPERIENCE IN THE CORRELATION OF CLINICAL AND RADIO-DIAGNOSTIC FINDINGS.

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SAN FRANCISCO.

During the past four years I have consistently employed as a diagnostic aid the *x*-ray in the field of internal medicine, and this in hospital, private and consultation work. The method followed was routined, thus: A thorough clinical examination was first made and a tentative diagnosis formed, then a radiogram was taken and, if necessary, the fluoroscope used; if the clinical and radiographic evidences did not tally, the patients were re-examined, special attention being directed to the discrepancy. Thus the clinical and radiographic pictures were finally correlated and the previous errors noted. It frequently happened that many clinicians had the opportunity of seeing the same patient and of forming tentative opinions: internes, those seeking postgraduate instruction, general practitioners and hospital physicians. In such event the varied errors were recorded.

The first year's work served to develop sufficient skill in the use of the *x*-ray to make it of service and incidentally to demonstrate the high educational value of the method outlined since.

1. Diagnostic errors could be frequently corrected while the patient was under clinical observation.

2. Those who had arrived at wrong clinical conclusions could not readily cavil at the correct one when the latter was based on such correlated and partly visible work.

It seems to me that, notwithstanding the loss of the plates and detailed records in the late San Francisco fire, short reports of group cases showing the diagnostic value of such correlated work and the recording of the lessons learned, and of some of the common mistakes made by internes and those seeking postgraduate instruction, might be of service.

DIAPHRAGAMATIC AFFECTIONS.

CASE 1.—Middle-aged man, whom previous examination had shown to be free from organic disease.

History.—An oculist had been testing his eye refraction and had used hyoscin as a pupil dilator. This had upset him, had made him nervous, and that morning he found he could not empty his chest during expiration.

Examination.—When he was stripped I was surprised to see that during the expiratory phase two cup-shaped hollows became evident, one at the outer border of each rectus muscle at the lower margin of the thoracic cage. These hollows almost disappeared during the latter part of inspiration, to become again marked during expiration, and the more strenuous the gentleman's expiratory endeavors became, the greater became the capacity of these retractions. The patient was neither dyspneic, nor in pain, but was mentally annoyed. The complaint of inability to expire completely, plus the hollows in the line of the diaphragm insertion, naturally suggested some abnormality in the action of that muscle.

X-ray Examination.—The fluoroscopic picture was interesting. The diaphragm moved up and down piston-like during respiration, but instead of each half being dome-shaped, it was as though the summit of each dome had been cut off, each half presenting a striking resemblance to a table mountain. This appearance was maintained during the whole respiratory phase and was evidently caused by a localized, bilateral spasm of the diaphragmatic fibers.

Since during inspiration the insertion and origin of these

fibers were approximated, the clinical evidence of the spasm diminished during this phase, so that without the fluoroscope I could only have surmised the probable, with the fluoroscope I could see the actual. The fact that such local spasm of this muscle can occur, is instructive and perhaps may be the cause of some of the crampy pains in its neighborhood, though this patient had no pain, and may explain the origin of some of the antero-posterior liver grooves not uncommonly found in the postmortem rooms.

After an afternoon spent on the golf links this man's diaphragm acted in the normal manner. Whether the hyoscin was directly responsible as the man declares, or whether it was simply a factor in producing a nervous condition, during which functional, bilateral local diaphragmatic spasm developed, I cannot say.

The movements of the diaphragm serve as an index of the movements of the basal surface of the lungs, and are better studied with the fluoroscope than in any other way. The edges of the lung base may move in the complemental pleural spaces without there being a corresponding diaphragm movement, and hence diaphragm movement and expansion of the lung basal edges are not necessarily synonymous. The Litten phrenic wave, on the other hand, is caused by the peeling off of the diaphragm from the chest wall in its descent and serves to indicate its excursion. Hence our clinical examination should include a diligent study of both these phenomena.

The most common errors in this connection noted during this work have been:

1. No estimation of the lung border movement has been attempted.
2. The extent of movement of the lung basal edge has been percussed, for only at one or, at most, two spots, and the result has been assumed to answer for the whole margin, consequently the clinical search for localized adhesions or for small loculated basal effusions, was insufficient, and any deductions drawn as to their presence or absence were illogically based.
3. The pulling up of the chest wall was commonly percussed as diaphragmatic movement.
4. No phrenic wave was looked for.
5. If looked for, the inspiratory sucking-in of the lower intercostal spaces was often mistaken for it.
6. Those who looked for and found it, often considered it unnecessary to estimate by percussion the lung border movement in a circumferential manner, even though they had only seen the phrenic wave in the axillary region.
7. Palpation sensitiveness was rarely sought for.

Practical clinical skill in the diagnosis of conditions in this region is difficult to acquire. The fluoroscope will aid much in the interpretation and, if used correctly, in the acquisition of such clinical ability.

OLD APICAL DISEASE.

CASE 2.—A young, well-developed woman, came to my office desiring to know the nature of a lump in her neck. There was a history of chronic cold some years previously.

Examination.—Inspection, palpation, percussion, and auscultation revealed nothing abnormal, except that the right supraclavicular and infraclavicular regions were not as prominent as the left.

X-ray Examination.—The fluoroscope showed a pear-shaped, dark, clean-edged shadow almost as large as an English walnut, just under the right clavicle. The history of a cold, the slightly sunken apex, the dense shadow, indicated an old, healed and probably calcified tubercular focus. The glands in the neck were considered tubercular and their removal advised, the patient being told of the old lung lesion. She visited many physicians, all of whom denied that there was or had been anything wrong with the right lung. She returned to tell me of my error, and it was only when she saw the dense shadow on a radiograph plate that she recognized the truth of my contention.

This case forms one of a series of similar ones in which in well-developed persons a slightly shrunken apex was the clinical corollary of a marked, clean-cut radiographic shadow. Such old lesions are often not noted in clinical work, since such patients present no symptoms of active lung disease.

The following errors are common:

1. Very little time is given to inspection and hence slight retractions are not noted.
2. The height and breadth of the lung apices are not as a routine measure percussed.
3. If differences in height and breadth be noted, they are not infrequently interpreted as errors of development.

Patients with such old lesions react to tuberculin; they occasionally get influenzal apical infiltrations. The composite picture almost invariably insures a diagnosis of active tuberculosis, even though no tubercle bacilli can be found, and, while this is satisfactory from the standpoint of treatment, a report of the cure of such cases of supposedly active tuberculosis is, of course, very misleading. The radiograms themselves may aid in the deception, but the continuous absence of the tubercle bacilli, the presence of bacillus of influenza, and the much darker, old shadow in the radiogram will, when correlated, serve to lead us to a correct diagnosis.

Of the relative value of pure clinical and radiographic work in the diagnosis of incipient apical tuberculosis I will say nothing, inasmuch as these methods are no more rival measures than are the clinical examinations of an acute abdominal lesion and the estimation of that patient's leucocyte count, but are handmaidens to each other. This case brings out the value of the radiogram from the standpoint of the relationship between the physician and the patient. The doubters become convinced when a radiogram of the normal and a radiogram of their own diseased lung or enlarged heart is shown them and become much more amenable to treatment and ready to diligently carry out the physician's instructions.

CENTRAL PNEUMONIC PATCHES.

CASE 3.—Patient, male, lately come to San Francisco from China, was seen in consultation. He complained of daily chills and excessive sweating.

Examination.—Patient looked septic. Liver and spleen much enlarged. Leucocytes 12,000. The heart and lungs seemed normal, the abdomen was not rigid, the liver was not tender, no malarial parasites could be found in the blood, and no amebæ in the stools, the urine was normal. He had been taking quinin with no apparent effect. We were inclined to suspect the presence of a deep seated liver abscess, but before deciding, we determined to make a fluoroscopic examination.

X-ray Examination.—With the fluoroscope we saw, centrally placed in the left lower lobe, just above the diaphragm, a dense shadow about the size of a tangerine orange. At deep inspiration the diaphragm descended and allowed the light to penetrate between it and the mass.

Re-examination.—Carefully re-examining the patient and paying particular attention to the left posterior lung base, one could detect over the site of this shadow, an increased resistance on percussing with the passive finger resting firmly on the chest, and over this area the vocal fremitus was diminished and the breath sounds faint. These physical signs alone would not have justified a diagnosis, and at best would have suggested waiting to determine if they should change. The correlated picture, however, made the diagnosis of a central patch of pneumonia, with a blocking of its feeding bronchus, occurring in a man who previously had a large liver and spleen (probably hypertrophic stage of atrophic cirrhosis) extremely probable and such the after history proved the case to be.

CASE 4.—A young Englishman, who had come from China, was seen in consultation with Dr. Brunn. He had been having chills and fever, and marked sweating, for which he had been unsuccessfully treated with quinin.

Examination.—No parasites were found in his blood, his leucocyte count was 12,000, no amebæ present in the stools. Liver and spleen both enlarged. The tentative diagnosis here also had been liver abscess. Examination of the lungs disclosed an area, just below the left scapular angle, where there was an increased percussion resistance; here a few râles could be heard and the expiration was slightly bronchial. A diagnosis of a central patch of pneumonia was made and its presence afterwards confirmed by the fluoroscope. The malarial parasites were later found so that we had to do with a case of malaria, which a central patch of pneumonia had complicated.

These two cases were interesting from several standpoints. In the first place, they show us we must not jump at a diagnosis of liver abscess in patients who have come from districts in which such abscesses are not uncommon, even though the past history, the symptoms and signs (chills, fever, leucocytosis, big liver) and the apparent absence of other causes are suggestive. The first case illustrated the value of the ray in the diagnosis of patches of central pneumonia which present few signs, and such silent pneumonic areas are not rare, particularly in children. Further, it convinced me that I was better able to recognize such deep-seated infiltration by the sense of resistance than by the percussion note. This has been repeatedly impressed on me in this work, and in the clinics, where I try to get the men to test their results obtained from percussion sound and percussion resistance, I find they come to realize the highest value of the latter. The same applies to the determination of the heart borders and of superficial and deep dulnesses generally. Personally I know that if I wish to obtain percussion results corresponding with *x*-ray findings I have to go systematically over the chest, with light percussion, with moderately heavy percussion, with percussion resistance, the passive finger resting lightly on the chest wall, and with percussion resistance, the passive finger resting firmly on the chest wall.

I believe that in neglecting to emphasize the value of percussion resistance many teachers and authors err. Perhaps some physicians are so gifted in tone perception, etc., as to render other methods superfluous, but in those whom I have tested the pressure sense has become more reliable.

PERIBRONCHIAL GLANDULAR ENLARGEMENTS.

CASE 5.—A young woman, seen in consultation with Dr. Wilson Shiels, had lost much weight. Dr. Shiels was unable to fatten her by any method whatever. No other symptoms were present except a slight cough.

Examination.—No cause was revealed for this loss of weight. A few glands could be felt in the iliac fossæ, and there was, perhaps, a slight percussion-palpation resistance over each lung root. The other signs, supposedly characteristic of the presence of peribronchial glands, were absent. Nevertheless the probable diagnosis seemed to me peribronchial tuberculosis.

X ray Examination.—We took a plate in order to determine this, and found a good deal of infiltration around each lung root. At one spot a tubercular area had become calcified; the rest of the lung was entirely clear and the diaphragm at its normal level.

This case is a type of several I have seen in which clinically there have not been sufficient signs to render the diagnosis of peribronchial glandular tuberculosis more than probable. On the other hand, indications were absent of involvement of the more readily examinable structures in a person who looks tubercular and behaves clinically as if tubercular. In many such patients (both adults and children) I have by means of the radiogram demonstrated the presence of peribronchial glandular enlargement. One can not from one plate conclude that the process is still an active one. To determine this another plate taken under the same conditions must show an increase in the area of infiltration, or combined with the picture we must have the clinical indications of tuberculosis, such as evening rise of temperature, cough and, of course, at some time or other tubercle bacilli in the sputum.

Occasionally one sees patients in whom quite an extension has taken place from the root into the lung toward the tip of the shoulder, this central infiltration exhibiting exceedingly few indications of its presence, but the radiogram readily reveals the extensive involvement. We must, however, remember that in tuberculosis of the body, wherever situated, peribronchial tuberculosis, old or recent, is apt to be found postmortem and such, a good radiogram, can show antemortem. Further, in patients with non-tubercular pulmonary inflammations, abdominal carcinoma, esophageal carcinoma, etc., peribronchial glandular enlargement may occur, and I have seen several cases in which the shadows cast by such glands were clearly apparent in radiograms of patients suffering from these diseases, and this in the absence of any evident correlated physical signs. In such instances the possibility that they represent old tubercular peribronchial glands must always be borne in mind and the question determined by the whole clinical picture.

In two examples—one of lung carcinoma and one of bronchial carcinoma—the physical signs and the presence of multiple enlarged supraclavicular glands rendered the diagnosis easy, but the pictures obtained were so characteristic as to leave no doubt of the value of the plate in doubtful cases.

LOCULATED EFFUSIONS.—INTERLOBAR EMPYEMA.

CASE 6.—A man, admitted into St. Luke's Hospital in Dr. Moffit's service, complaining of pain in the right hypochondriac region. The pulse was hurried and a moderate degree of fever was present. The interne diagnosed cholecystitis. Investigation showed that we had to do with one of those cases of thoracic disease which simulate an intra-abdominal lesion.

Examination.—Chest examination demonstrated posteriorly on the right side in the line of the great fissure a dull area, over which there were an increased superficial percussion resistance and a diminution of breath sounds. This area increased from day to day, finally becoming oval in shape. In increasing it evidently pressed on the lung tissue of the upper and lower lobes, giving the changeable physical signs that arise from the varying amount of air in the lung vesicles.

X-ray Examination.—Considering that we were dealing with a case of interlobar empyema we made a radiogram. A large oval shadow with sharp edges, the periphery darker than the center was readily seen, the center corresponding pretty nearly to the normal position of the fissure. The right diaphragm was quite as low as the left, as though Nature had determined to make as much room as possible for the collection, thus avoiding tension. Operation demonstrated the correctness of the diagnosis.

This case was to me very instructive, inasmuch as I had been asked some weeks previously to interpret an almost identical plate made from a patient whom I had not seen clinically. The differential diagnosis of the plate seemed to rest between a cyst of the lung and a loculated collection of fluid dependent on a local pleurisy or a rib tuberculosis. I thought it unlikely to be a cyst, inasmuch as I would have expected a cyst of such size growing in the soft lung parenchyma to have been more rounded. I, therefore, considered it to be due to one of the two latter conditions. Later I saw a more recent radiogram of the same patient. The oval shadow had vanished, the lung was quite clear, but now there was a little fluid in the pleural cavity which finally disap-

peared. In view of the correlated picture of the previous case and the two radiograms of this case, I believe it was a case of interlobar serous pleural effusion which had ruptured into the general pleural cavity and in that way a cure had resulted.

So much has been written on the value of the *x*-ray in the diagnosis of aneurism of the arch of the aorta that I have little to add on this subject. However, I have never seen such an aneurism depicted on the plate (and I have seen many) which did not give rise to clinical signs and whose presence ought not to have been surmised previous to the radiographic examination. I have watched patients in which I thought such to be the case, but they turned out to be examples of arteriosclerosis of the arch, the plate showing the characteristic knob on the left side. In such connection I would again emphasize the mistake made by so many of not cultivating the sense of percussion, palpation resistance, in percussing out dulnesses in this area; especially is this method of value in cases complicated by emphysema which may otherwise hide the aneurismal enlargement. But I do not doubt that there do occur small saccular aneurisms which exhibit no chest physical signs and which, of course, are distinctly visible on a good plate.

I would like here to refer to a remarkable case which I lately saw: An old man with Bright's disease had paralysis of one vocal cord. I carefully overhauled his chest for indications of aneurism and could find none. The interne, Dr. Loos, made the postmortem examination and reported a small saccular aneurism. He removed the heart and big vessels in mass with the contained blood. I saw the specimens and noted the presence of the aneurism, which was about the size of half a marble. We emptied the heart and aorta, and, lo! the pouch disappeared and its wall became in line with the adjoining walls, but remained somewhat loose. Two other physicians then entered the room, neither of whom could see any indication of the pouch. Such an occurrence must have been due to the wall at this point possessing enough elasticity to retract when once the dilating internal blood was removed, and this opens up the question whether functional dilatations are not temporary aneurisms and whether the vessels do not sometimes change at death just as may the size of the heart chambers.

I desire to add one word concerning dilatation or aneurisms of the descending thoracic aorta. I have seen several patients who have complained of one-sided chest pains, pseudoanginal in character, but without the other usual accompanying symptoms of anginal attacks. They have had this pain for years and have shown a markedly high systolic blood pressure. In some of these patients presenting no physical signs apart from a markedly accentuated second aortic sound, dilatation of the descending thoracic aorta can be shown as it runs behind the heart, and, though I have carefully looked, I have been able to find no corresponding correlatable physical signs. Potassium iodid in large doses alleviates and often dissipates the pain.

THE PNEUMOTHORAX GROUP.

CASE 7.—*Patient and History.*—A young man, apparently in good health, had been seized some weeks previously with sudden left-sided chest pain. Since then he had been somewhat dyspneic, but had continued to get about.

Examination.—The left side of the chest moved less than the right, though it was more prominent, the percussion note was hyper-resonant, the respiratory murmur somewhat faint, the left diaphragm low and moved little or none. There was no amphoric note, no amphoric respiration, no coin sound, no displacement of the heart and, because of the absence of these supposedly characteristic signs, an error was made in diagnosis.

X-ray Examination.—With the fluoroscope I was able to convince the doubters that a pneumothorax was present as the lattice work of the chest was unnaturally bright, and the lung could be plainly seen lying along the vertebral column. It expanded a little at each inspiration and pulsated in an expansile manner apparently synchronously with the heart. Similarly in a considerable number of patients with pleuritic effusion I have been able by the use of the fluoroscope to confirm my clinical suspicions that air had been unintentionally admitted owing to bungling tapping.

There is no doubt but that there is a tendency for physicians to rely too much on the presence of so-called pathognomonic signs in the diagnosis of disease. This has been very apparent in the course of the work we have attempted to do and has been responsible for many diagnostic errors. It takes some time before one can successfully inculcate in a new batch of senior students that there are practically no pathognomonic signs, but that the diagnosis must be made from a much broader standpoint, and in that inculcation the ray has been very serviceable.

THE HEART AND PERICARDIUM.

As is well known, the auricular and ventricular pulsations can be plainly seen with the fluoroscope and the size of the respective chambers noted, and thus percussion ability can be gauged and acquired. I have not been able to time them, and in one thick-set patient with block heart the fluoroscopic examination was unsatisfactory. In such cases multiple tracings are to me much more convincing than any fluoroscopist's opinion.

In two patients referred for an *x*-ray chest examination I was able to suggest the presence of a pericardial exudate. Both patients were ambulatory. In one the pericardial exudate complicated a carcinoma of the mediastinum, in the other, lung and peribronchial tuberculosis. No postmortem was allowed of the first, but the pericardial sac in the other patient contained 300 c.c. of fluid. The diagnosis was suggested in both by radiograms. As I had not previously clinically examined the patients I can not say what had masked the exudate. We must admit, with Jones of Memphis, that many cases of pericardial effusions pass unrecognized. I can not but believe that some of the big dilated hearts that have diminished so wonderfully in size under Nauheim or Schott treatment have really been instances of unrecognized pericardial effusion. One example of this has lately come under my observation and its interpretation was plain. The failure to recognize these cases seems to be due to neglect on the part of the physician:

1. To suspect its possible presence.
2. To examine the patient in both the upright and recumbent positions.
3. To compare the apex beat and the outer limit of percussion resistance.
4. To test for palpation sensitiveness.

Some time ago I demonstrated plates which strongly suggested the existence of pericardial adhesions. For some months we had been testing, in hospital and clinic, the value of the clinical signs supposedly indicative of their presence. Our records were unfortunately burned. With Tallant we found Broadbent's posterior systolic retraction present in many patients in which there was no suggestion of adhesions, and in those who came to autopsy none was found. In such patients the position of the maximum retraction changed with deep res-

piration. In a small number no such change occurred. In these, other signs indicative of the existence of adhesions were evident, and it was in these that the radiograms also suggested their presence. The clinical recognition of these adhesions is at times easy, in other cases difficult, and in the latter class the ray is of distinct assistance.

ESOPHAGEAL DISEASES.

In some of these the radiograms, if correctly interpreted, will be of assistance. But we must never forget that esophageal tumors may pulsate and, in cases of abscesses, may actually show an expansile pulsation. We will avoid error if we remember that any tumor that has given rise to difficulty of swallowing as its first symptom is almost certainly esophageal in origin, however much it appears on the fluoroscope to resemble an aneurism. Again, in cases of esophageal pouches or dilatations consequent on spasm of the cardia, the radiogram will be of much service and will fulfill a function to which I have not alluded, viz: prevent dangerous inquisitive diagnostic meddling. The history of the patient, plus radiograms made with the pouch or dilatation, empty and then with the pouch containing milk with bismuth in suspension will render the diagnosis so easy as to make it superfluous to fiddle with double tubes or queer sounds, by the use of which perforation or ulceration may be produced. A physical sign, which as far as I know, has not been hitherto described, occurred in a case of an esophageal pouch and consisted in a change of pulse rhythm according as the pouch was empty or full. The change was more marked on deep respiration, and is, of course, readily explainable by the proximity of the pouch to the vessels, it, when full, exerting pressure on them. Reflection suggests that this pulse variation might be confined to one side, depending on the position of the pouch.

In esophageal diseases the correlation will be between the history, the symptoms and the radiogram, and hence a full history with events chronologically arranged is of extreme importance.

DISEASES OF THE ABDOMEN.

The diagnostic value of the *x*-ray in the diagnosis of renal, ureteral and bladder calculi and of vertebral and iliac disease is so universally recognized that little comment is here necessary. But we must not forget that shadows simulating those cast by calculi have been thrown by calcified retroperitoneal glands, by sesamoid bones, etc., so that some surgeons have even gone so far as to introduce a leaden stylet into the ureters and then photograph it *in situ* in order to determine if the doubtful shadow lay in the line of the ureter shadow. Such a proceeding is rarely necessary if we will properly correlate our clinical and radiographic findings and if we remember that segregation of the urine or, better, ureteral catheterization is as much demanded in the diagnostic study of these cases as radiography. Not infrequently the shadows of the kidneys themselves can be distinctly outlined on the plate, their relative size compared and any irregularity of the border noted.

I have never obtained definite radiographic outlines of the normal liver, but in cases in which pathologic changes have taken place in that organ modifying its density I have frequently succeeded in plainly outlining it on the photographic plate. Thus at the San Francisco County Medical Society I lately demonstrated a series of radiograms showing:

1. A Riedel's lobe.

2. A much enlarged liver which turned out to be the result of syphilis.

3. Another in which the enlargement was due to a liver abscess.

4. A series in which a corset lobe was plainly visible, running down toward the iliac crest.

5. A number in which the shadows cast by intrahepatic gallstones were distinct.

Of much help in the interpretation of some of these plates was the position of the large intestine, in liver enlargements its shadow ended at the lower border of those enlargements and, however big the liver was, the normal oblique line of its lower border was maintained. In kidney tumors, on the other hand, the bowel ran up alongside the tumor toward the shadow cast by the liver above. The nature of these masses could be readily detected by clinical means alone if the clinician persevered or varied his methods till he obtained complete relaxation of the abdominal wall, and then always remembered to trace the whole extent of the lower liver border. These points, however, received altogether insufficient attention from those working in the clinics. Similarly I have succeeded in registering on the plate a huge leukemic spleen, the notch being distinctly visible, in a patient who had been supposed to possess a tumor of renal origin. The blood picture was pathognomonic, however.

We can learn much of the position of the stomach, its size, its division into pathologic compartments and the likely therapeutic value of an abdominal support from radiography. I have not yet succeeded, as Hemmeter has, in getting radiographic evidence of the presence of a gastric ulcer, but have several times been guided to a stomach carcinoma.

I have up to now received little aid from the ray in the diagnosis of brain lesions. But it is probable that the technic which allows one to get beautifully clear anteroposterior views of the cranial air sinuses will help considerably in the differential diagnosis of the cause of the various headaches.

In conclusion I would suggest that:

1. Bilateral local functional spasm of the diaphragm can occur.

2. An appreciation of percussion resistance is of more assistance in diagnosis than is the percussion note.

3. An interlobar pleural effusion is sometimes serous, and hence the term interlobar empyema is a misnomer.

4. So-called functional dilatation of blood vessels are really temporary aneurisms, and that the vessels may change at or after death.

5. As Tallant has shown, many persons present the Broadbent retraction of the left lower posterior chest wall. In those cases in which there are no adhesions I have found that the position of the maximum retraction varies with the respiratory phases, being higher during expiration, lower during inspiration, while in cases with adhesions this change does not happen.

6. In patients presenting a pouch of the esophagus a change of pulse rhythm may occur, according as the pouch is empty or full, this variation being better marked during full respiration.

7. Pericardial effusions are often unrecognized and probably some cases of dilated hearts which have undergone extreme reduction in size from the Nauheim treatment have been instances of pericardial effusion.

8. The correlation of clinical and Roentgen diagnostic work as outlined will be of value as follows:

A. It will much increase the average physician's percentage of successful diagnoses.

B. It will enable even the expert clinician to assert that certain lesions are present whose existence he could otherwise only suspect, as e. g., peribronchial tuberculosis, central patches of pneumonia where the feeding bronchus is blocked, certain cases of bi- or triloculated stomach, and it will assist him to maintain a uniform standard, since it will tend to save him from errors made when he is brain weary and hurried.

C. It will be of some assistance in the relations between physician and patient.

D. It will sometimes render unnecessary dangerous inquisitive diagnostic methods, as, e. g., in esophageal pouches or dilatations.

E. It will assist the clinician in his endeavors to develop a high degree of clinical skill, helping him to sift his clinical armamentarium.

F. It will aid considerably in teaching, especially where it is necessary to correct rather than to instruct.

ADDENDUM.

In exposing many hundreds of patients for diagnostic purposes I have produced one burn. That was during the early work and should have been avoided. The burn healed with a good scar. I have seen no other evil results in patients. The summation of exposures renders the operator's task risky and dangerous. Protection must be thorough, and I would advise the clinician to have nothing whatsoever to do with radiotherapy.

MULTIPLE NEURITIS (NON-DIPHTHERITIC) IN CHILDREN.*

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Multiple neuritis in children is generally considered a rare condition. In Starr's[1] analysis of 154 cases of multiple neuritis, non-diphtheritic, none of the patients were under 15 years of age. In Remak's[2] series of 94 cases, 9 patients were between 10 and 20 years of age, but none below. Gowers[3] refers to it as extremely uncommon, as does Oppenheim.[4] Sachs[5] considers the question thoroughly and appears to have seen a number of cases, but gives no definite data.

Holt[6] speaks of the chief cause of multiple neuritis in children as being diphtheria, although it is occasionally seen after infectious diseases. He states that the metallic poisons rarely cause multiple neuritis in early life, and the same is true of alcohol. He refers to certain cases which have been assigned to simple exposure to cold. Buzzard[7] thinks it probable that a number of cases of so-called infantile paralysis are examples of multiple neuritis, especially those in which the patients make an exceptionally good recovery after a very long delay.

Cases of multiple neuritis in children have occurred in epidemics, usually associated with epidemics of anterior poliomyelitis. Medin[8] reports a most interesting series of cases which show this association. He studied cases occurring about Stockholm, viz.: 43 or 44 epidemic cases occurring in the year 1887, 29 sporadic cases occurring between 1888 and 1894 and 21 epidemic cases occurring during 1895. These were almost all cases of anterior poliomyelitis, but in the epidemic cases in 1887 he saw 6 of multiple neuritis and 2 during the epidemic of 1895.

The cases which Hammond[9] reported in 1895 occurring in an epidemic at Bridgeport, Conn., seem to have been almost exclusively cases of multiple neuritis. He recorded 10 in which the patients ranged in age from 4½ months to 4½ years; the youngest child died of inanition and dysphagia, the others improved. Caverly[10] and MacPhail[11] report a series of 126 cases of infantile paralysis occurring during the summer of 1894 in the city of Rutland, Vt. These cases were for the most part anterior poliomyelitis, "but in some there were elements strongly suggestive of multiple neuritis." Blackall[12] reports an epidemic in Australia. His 6 cases seem to have been cases of multiple neuritis. These cases occurring in epidemics are supposed to be due to some acute microbic infection, which it seems at times affects the spinal cord, at times the peripheral nerves and more rarely the brain and its membranes.

One of us (Dr. Greenbaum) has collected from the literature and tabulated 138 cases of non-diphtheritic multiple neuritis occurring in children. These cases are made up as follows:

	Total.	Boys.	Girls.	Not mentioned.
INFECTIOUS CASES.				
Grippe	3	2	1	0
Measles	8	2	5	1
Typhoid	5	4	1	0
Tuberculosis	1	1	0	0
Syphilis	2	0	0	2
Whooping cough	7	3	2	2
Chickenpox	1	0	0	1
Scarlet fever	6	2	4	0
Miscellaneous	15	6	5	4
	48	20	18	10
TOXIC CASES.				
Lead	19	11	6	2
Alcohol	5	5	0	0
Carbon monoxid.	1	1	0	0
Arsenic chorea	19	4	13	2
Arsenic, non-chorea	4	2	1	1
	48	23	20	5
Ascending palsy	9	3	3	3
Unknown origin	33	11	9	13
	42	14	12	16
Total number of cases				138

In addition to these cases, Starr[1] says:

All alcoholic drinks are not equally prone to produce paralysis. I have seen a case in a child of three years who had been given beer several times a day for several weeks.

Sachs[5] states:

I have seen several cases of this description (malarial neuritis) in children who were brought to my clinic from the swampy parts of Long Island.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906. This paper was accompanied with a tabulated report of 138 cases, for which THE JOURNAL could not give space. The author offers to send a reprint of the complete article, including the case reports, to anyone on request. The entire article will also appear in the volume of Transactions of the Section on Nervous and Mental Diseases of the American Medical Association, 1906.

1. "Organic Nervous Diseases," pp. 102 and 120.
2. See Nothnagel's Spec. Path. u. Ther., xi, 3, p. 322.
3. "Diseases of the Nervous System," 3d ed., i, p. 152.
4. "Diseases of the Nervous System," p. 336, 2d Am. ed., i, p. 374, 2d German ed.
5. "Nervous Diseases of Children," 2d ed.
6. "Diseases of Infancy and Childhood," 2d ed., p. 831.
7. See Goodhardt: "Children's Diseases," 1899, 6th ed., p. 487.
8. See Neurol. Centrbl., 1891, p. 397; 1896, p. 1119; 1898, p. 703.
9. Med. Rec., Nov. 9, 1895.
10. THE JOURNAL A. M. A., 1896, p. 1; Med. Rec., 1894, Dec. 1, p. 673.
11. Montreal Med. Jour., No. 23, p. 417.
12. Australian Med. Gaz., 1904, July 20, p. 347.

Webber[13] says:

Of all the patients, the youngest was nine years old. This is the youngest child in the list.

According to Oppenheim:[4]

I have seen it several times in children from four to six years old.

It seems to us that the disease is probably not so uncommon as has been generally stated, but that the cases are not reported either because they are mistaken for ordinary infantile paralysis or else are not thought sufficiently interesting. Our experience in the Neurological Dispensary of the Johns Hopkins Hospital is somewhat unusual in two respects: 1, in the rather small number of cases of multiple neuritis in general; 2, in the large proportion of children we have seen among them. In the past 16 years, with an average of 1,200 new neurologic cases a year, we have seen only 21 cases in which the diagnosis of multiple neuritis (non-diphtheritic) has been made, and, out of these, 8 have occurred in children under 12. This does not include hospital cases where the severe adult cases are more apt to be sent directly. Among ward cases was one case of a child which was not recorded in the dispensary. The cases which we have to report include 5 girls and 3 boys, their ages being 3, 4, 5, 6, 9, 10, 10 and 12, respectively. Three of them followed typhoid fever, two of them having already been reported by Dr. Osler. In the other 5 cases we were entirely unable to determine any etiologic factors.

The clinical picture in all the cases was typical of multiple neuritis. The onset was generally acute with lassitude, fever and loss of appetite. Both arms and legs were affected in every case and practically symmetrically. Electric changes were generally present and the deep reflexes were lost in every case but Case 4, that of a girl of 12. We were never able to explain the persistence of the reflexes in this single case, unless it might have been a case of lead poisoning. In lead cases we have noticed that the knee-jerks are apt to be exaggerated, even at times when the legs were also themselves involved. All the patients improved, the arms improving first in every case except Case 4, the girl referred to, in whom the legs improved rapidly, but in whom, now 9 years after the onset, there is a stationary bilateral atrophic paralysis of the intrinsic muscles of the hands. This perhaps also indicates lead poisoning.

In a number of children there has been a tendency to the development of a slight contraction of the calf muscles. One of the patients showed a definite recurrence, and one two or three relapses.[14] The recovery in all was slow, extending over several months. We include only short abstracts of the cases.

CASE SUMMARIES.

CASE 1.—Previously reported by Dr. Osler.

Patient.—D. S., boy, aged 9, was admitted to the Neurological Dispensary, Nov. 1, 1893.

History.—Patient had a severe fever of three weeks' duration; during convalescence, weakness of arms and legs with finally complete paralysis; foot-drop and wrist drop; great soreness of the muscles; progressive improvement; complete recovery after persisting for more than a year.

Present Condition.—Patient was seen April 17, 1906; had remained well, in perfectly normal condtion, except perhaps some slight weakness of the anterior muscles of the lower leg. "Can raise himself on his toes but not on his heels."

CASE 2.—Previously reported by Dr. Osler.

Patient.—G. R., boy, aged 10, was admitted to the Neurological Dispensary,

History.—In September, 1894, he had had a severe attack of typhoid fever; in third week soreness in leg; gradual paralysis of arms and legs; on admission feebleness of arm muscles; grasp extremely feeble, double foot-drop; typical steppage gait; reaction of degeneration in leg muscles; great muscular soreness, arms and legs; discharged Feb. 4, 1895, after considerable improvement.

CASE 3.—Referred to by Dr. Osler as a case following exposure to cold.

Patient.—H. J. F., aged 10, was exposed to wet and cold in September, 1894. On following morning complained of weakness in arms and hands. In the afternoon his legs were weak; by night he could not walk; was in bed for a month with fever and delirium. "He became perfectly helpless, but never at any time were there symptoms of typhoid fever."

Clinical History.—Patient was admitted Jan. 2, 1895. He was then pale and weak; walk typically steppage; cranial muscles, neck, shoulder and upper arm muscles all good, muscles of wrist, weak; dorsal flexors weaker; fingers were paralyzed; in legs, typical foot-drop; could not extend or flex the ankles, there was no particular sensitiveness of the muscles; sensation appeared normal; deep reflexes were absent; electrical changes in the weakened muscles.

Discharged from hospital, March 23, greatly improved. Returned later, in 1897, with arms perfectly normal; still some weakness of the ankle. In 1898 the right foot was almost completely normal; still some weakness on the left side.

CASE 4.—Patient.—L. N., girl, aged 12, was admitted to the Neurological Dispensary in August, 1897, sick with fever and vomiting and pain in limbs.

Examination and Clinical History.—On examination she presented a typical picture of multiple neuritis, double wrist and foot-drop, except that the deep reflexes were all exaggerated. She could not sit up in bed; arms and legs seem to have been extremely weak. By September she had improved somewhat; could sit up and walk with assistance. Arms and legs were still very weak.

Subsequent History.—We were never able to find any etiologic factor, although we inquired diligently into her surroundings. We saw her constantly from 1897 to 1901 and infrequently since. She improved very greatly, particularly in regard to her legs which became normal. She was examined this year, is in excellent health; no abnormality about the legs, but her hands show a symmetrical atrophy, with loss of electrical response. This has been present and has not increased for the last eight or nine years. The deep reflexes are present and active, but not exaggerated.

CASE 5.—*Patient.*—N. D., girl, white, aged 5, came to dispensary complaining of pain in legs and inability to walk, May 31, 1900.

History.—Patient had had good surroundings; no indication of any source of poisoning; she had always been a nervous child. On May 1 she became listless and feverish; appetite was poor; complained of pains in legs and arms; arms and legs became weak; manipulation of arms and legs was painful; when she entered the hospital she had double wrist-drop (slight); triceps reflex was present; double foot-drop; unable to walk; slight knee-jerk. Decreased electrical excitability in arms. Partial reaction of degeneration in legs.

Subsequent History.—Condition improved first in arms; she walked in September; was discharged from hospital, Oct. 18, 1900. During her stay in hospital she had irregular temperature, 101.5 being the highest. Child was fairly well through winter, but in summer of 1901 there was a recurrence of the neuritis which lasted a little over a month. She was examined in March, 1906. There have been no other recurrences; condition of her muscular system was practically normal; slight contracture of the gastrocnemius on each side; instep slightly more arched than normal; electrical reactions were normal.

CASE 6.—W. E., girl, aged 3, white.

History.—Child had been rather sickly. In February, 1905,

13. Multiple neuritis., Archives of Medicine, vol. xii, p. 42.

14. Since the paper was read, this patient had a sudden attack of some acute disorder. The paralysis seemed to recur again and the patient died.

was operated on for swollen glands; in March had double pneumonia; during April and May was perfectly well. No source of poisoning was discoverable. In June she became fretful, had no appetite, was easily tired. In July she suddenly collapsed; arms and legs weak.

Clinical History.—Patient came to hospital Aug. 3, 1905, when she could hardly sit up. There was typical bilateral wrist and foot-drop; reaction of degeneration in muscles below elbow and knee; deep reflexes were absent; muscles were tender on pressure. Patient was given galvanism and massage daily. In a month her hands began to improve. By November she could stand alone and walk by holding her mother's hands. Deep reflexes in arms present; knee-jerk present, but ankle reflexes were not obtained. Condition continued to improve, but on December 6 there was a distinct relapse, particularly in the legs. Again began to walk December 18, and after that improvement was continuous. Note on April 12, 1906, records almost complete recovery, except slight contracture in the calf muscles.

CASE 7.—History.—A. S., girl, aged 4, white, of a good German family, had had measles in May which lasted for two weeks. About the middle of June, 1905, she began to be fretful, had pain in stomach, back and legs, vomited, gradually lost power in walking and in a week was entirely unable to; also unable to use her hands.

Clinical History.—She was brought to the dispensary Nov. 11, 1905. There was no cause ascertainable except, perhaps, that she had been given "a mouthful of beer two or three times a week." There was bilateral wrist-drop, also some muscular atrophy; deep reflexes were absent; there was bilateral foot-drop. Movements of upper arm and legs above knee were normal. Calf muscles were slightly contracted. On left side knee-jerks were absent; right, just obtained. There were no reflexes from ankles. Pressure over muscles and nerves in arms and legs caused no pain. Typical reaction of degeneration in muscles of arms and legs.

Galvanism and massage daily. On November 19 the patient walked with typical steppage gait. She improved steadily. In March, 1906, the hands were nearly normal and the walk good. There was slight contracture of the gastrocnemius. In April, 1906, knee-jerks were normal.

CASE 8.—*Patient.*—B. F., girl, aged 6, from West Virginia, was seen in the dispensary with Dr. Baer.

History.—Patient was a strong child up to her illness with typhoid fever, Oct. 8, 1905; she was very ill, had two relapses; became weak some time during the illness, just when is not known. She was sent to St. Mary's Hospital, Clarksburg, W. Va., Nov. 17, 1905, at which time both arms and legs were paralyzed. She improved greatly; left the hospital Feb. 18, 1906.

Examination.—On May 26, intrinsic muscles of the hands were slightly atrophied; muscular strength was fair; deep reflexes were doubtfully obtained; she walked with the typical steppage gait; strength of the hips and knees was good; there was marked weakness in flexors of ankles, the extensor calf muscles were stronger; knee kick was absent on right, doubtfully obtained on reinforcement on left; ankle reflexes were absent; plantar stimulation gave no response; pressure over leg muscles was not painful; electrical changes in legs were present, but not definitely determined on account of extreme irritability of child.

ADDITIONAL CASES.

A case seen in the ward of the Johns Hopkins Hospital has already been reported[15] because of its interest in relation to generalized lead paralysis.

CASE 9.—A girl, aged 5½, was in the habit of scraping the cans in which the food came. Her arms had been weak for three months but two days before admission her legs became so weak that she was entirely unable to walk. There was a lead line on her gums, knee-jerks were normal. Unfortunately, she remained in the hospital only two days.

CASE 10.—R. L., girl, aged 8, had multiple neuritis, following chorea and arsenic. Patient was seen with Dr. Cary Gamble, who will publish it in detail later.[16]

History.—During August and September, 1897, she had slight attack of chorea and was given Fowler's solution in seven drop doses. She took it in two courses and received in all 504 drops in about one month. On September 27 she began to lose power in legs and to complain of pins and needles.

Clinical History.—On October 1 she was admitted under Dr. Gamble's care to St. Joseph's Hospital. She had an arsenical skin eruption and complained of pins and needles in the calves of her legs, which were almost completely paralyzed. There were sensory changes over legs. Nerves and muscles were sensitive. Her condition remained practically the same until on October 18, when she began to complain of tingling in fingers, and on October 21 both hands became paralyzed. Next day she began to have difficulty in breathing, with rapid pulse. This was relieved by electricity, but the attacks recurred. On October 28 it was noted that the diaphragm was paralyzed. She died October 30.

SYMPTOMATOLOGY.

From a review of these cases and of the cases found in the literature, it appears that the clinical picture of multiple neuritis in children does not differ in any material manner from that presented by the disease in adults. Sensory troubles are difficult to determine in children, still subjective pains, paresthesia, pains on pressure over nerves and muscles, and pain on moving the limbs, either actively or passively, have all been described. Objectively, a decrease in the sense perceptions to touch has been found, together with pain and temperature as well as a delay in their conduction. The sensibility has been noted as normal in a number of cases. Sensory disturbances when present do not as a rule persist for a long time.

Electric changes have usually been found, although in certain of the cases the reaction has been noted as normal. The change may be only a decrease in excitability, but usually one of the grades of the reaction of degeneration is present. Atrophy is generally present and may be permanent. The deep reflexes are usually lost, but in certain cases have been noted as normal. The reflexes, if lost, usually return as the patient gets well.

The distribution of the paralysis is usually widespread and symmetrical, affecting both the upper and lower limbs, but the legs are generally more severely involved than the arms. This is especially true in cases following infectious diseases. In the lead cases, both the upper and lower limbs were involved 15 times. In two, the legs were alone involved. This confirms the statement which is generally made that lead paralysis in children is apt to involve the legs. In one of these cases one side alone was involved. In the alcoholic and arsenic cases the paralysis has affected both the upper and lower limbs, but here again the legs were more severely affected. The arms and hands are seldom involved alone, and in recovery they usually recover before the legs and feet.

DIFFERENTIAL DIAGNOSIS.

In diagnosis, the chief difficulty is to differentiate it from poliomyelitis, but the following points will be of help:

1. Multiple neuritis comes on more insidiously than poliomyelitis, but this is not always the case.

2. The cause in multiple neuritis may be known, such as metallic poisoning or a previous acute illness. In poliomyelitis the cause is unknown.

15. Johns Hopkins Hosp. Bull., 1904, xv, p. 159.

16. This case is referred to in Dr. Osler's "Practice of Medicine."

3. Fever is more apt to occur at the onset of poliomyelitis.

4. Subjective pains may occur in either, but are perhaps more apt to occur in multiple neuritis and to last longer.

5. Objective disturbances in sensation, although difficult to estimate in children, point to multiple neuritis. Pain on pressure over muscles may occur in either.

6. Poliomyelitis may attack a single limb or the limbs in any combination and involve any group of muscles, but the paralysis is practically never bilaterally symmetrical and rarely affects all four limbs at one time. A widespread symmetrical paralysis is very characteristic of multiple neuritis.

7. Complete or nearly complete recovery is the rule in multiple neuritis; it is the exception in poliomyelitis.

8. A return of the knee-jerks and of the electric reactions to normal suggests the existence of multiple neuritis.

Besides poliomyelitis, the disease may in certain cases have to be differentiated from Friedreich's ataxia, tabes, hysteria, interstitial neuritis of Dejerine, progressive muscular dystrophy, myelitis, rickets, Pott's disease, progressive muscular atrophy and meningitis, but in these the history and associated symptoms makes the differentiation easy, and in none of them do we see the typical bilateral foot-drop and wrist-drop.

PROGNOSIS.

Prognosis is good. We note complete recovery in 58 of the cases in literature, in 46 partial recovery at the time of the report. In one case recovery failed to take place, and in 33 cases no mention is made as to the course of the disease. Fourteen cases were fatal: two arsenic, two alcohol, one lead, one unknown, six ascending paralysis, one angina follicularis, one syphilis. Of these, four have autopsy reports as follows:

Autopsy Reports.—Kahler and Pick: Nothing abnormal in nervous system.

Kast: Patient died of aspiration pneumonia. In the microscopic and macroscopic investigation the central nervous system was found normal. On the other hand, striking degeneration of the peripheral nerves, especially the hypoglossi, recurrent laryngeals, etc. The exact investigation of the rest of the peripheral nerves is not given, however it is conjectured that there are peripheral processes giving a symptom complex which clinically imports a spinal or bulbar disease.

Campbell: Pneumonia, tuberculosis, etc., disseminated degeneration of the myelin containing fibers through the white substance of the spinal cord and especially prominent in the posterior columns. Further, partial degeneration of the anterior and posterior nerve roots and finally degeneration in the peripheral nerves which, to be sure, was not of very high degree but was developed stronger peripherally.

Bergeron: Ranvier at autopsy found the nerve centers normal.

We note that five of the cases are recurrent; scarlet fever (Egis-Basette-Eglise), whooping cough (Surmay), unknown (Chapin).

TREATMENT.

In treatment, the cause, if possible, should be removed. A nourishing diet should be given, the bowels kept open. Rest in bed in the early stages, quinin in the malarial cases, massage, electricity, passive exercise, mild gymnastics and hydrotherapy are helpful. A tonic may be given. The pains usually disappear spontaneously; if they do not, hot baths or bromids will relieve them. If a permanent foot-drop or wrist-drop remain, the orthopedic surgeon may be consulted.[17]

DISCUSSION.

DR. W. N. BULLARD, Boston, said that he has seen a number of cases of this character, and asked Dr. Thomas if it is not possible that some of these unexplained cases were really due to diphtheria. In some of his own cases he has found it exceedingly difficult to discover the preceding disease, but many of them have been traced back to diphtheria.

DR. H. M. THOMAS, Baltimore, said that it is always hard to exclude anything absolutely, but that the cases to which he referred were not regarded as diphtheritic. The paralysis was different from that characteristic of diphtheria. The throat was not involved and there was no paralysis of accommodation. There must have been some toxin the cause of which was unknown. Certain cases of multiple neuritis in children have occurred in epidemics, usually in association with epidemics of anterior poliomyelitis, and it would look as if the same poison might be a cause of the two conditions.

A NEW MODE OF TREATMENT FOR INOPERABLE CANCER OF THE UTERUS BY MEANS OF ACETONE.*

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ST. LOUIS.

In recent literature there is a remarkable dearth on the subject of the treatment of inoperable cancer. The interest of the profession seems to be absorbed by the problems of earlier diagnosis and more radical operation in cases which are still within the reach of the surgeon. Yet, so long as the usual means of treatment fail to relieve in any degree the deplorable fate of the unfortunate ones who are beyond that reach, the attention and energy of the profession must also be claimed for improvements along the lines of treatment of inoperable carcinoma.

A rapid survey will substantiate these claims as far as inoperable cancer of the uterus is concerned. The much-heralded trypsin treatment has not come up to its promises. It has utterly failed in my cases and in those of most of the other observers. Roentgen-ray therapy in uterine cancer thus far at least has not accomplished any beneficial results. The experiences gained in the St. Louis Skin and Cancer Hospital prove that the Roentgen rays can not reach and destroy malignant growths in the cavities of the body.

The soundest suggestion of recent years is undoubtedly that of Lomer who advises curetting and thermocauterizing the diseased area thoroughly, and repeating this procedure at regular intervals of four weeks. Thus, by an extensive cicatrization of the cauterized tissues the remaining cancer cells, impaired as they are by the effect of the burning heat, would be deprived of their necessary nourishment. Unfortunately, this plan of treatment can not easily be carried out in practice. There are but few patients in my experience who will submit to these periodical operations, and I am not aware that Lomer's valuable suggestion has been confirmed by many reports from other quarters.

The hosts of other remedial agents need only be mentioned in order to be dismissed as absolutely useless:

17. For additional literature the reader is referred to the following: Abundo: Quoted in Neurol. Centrbl., 1891, No. 10, p. 396; Osler: "Studies in Typhoid Fever," ii, p. 404 to 411; Perrin: Arch. de Méd. des Enfants, Dec. 1902, p. 731.

* From the St. Louis Skin and Cancer Hospital.

Thyroid feeding, administration of drugs such as chelidonium majus, application of calcium carbid, electricity, the cancroin of Adamkiewicz, injections of various sera or of irritating substances such as alcohol, acetic acid, corrosive sublimate, methyl violet, venom of the cobra di capello, oil of turpentine, and arsenious acid.

The reader must bear in mind that, with the exception of trypsin and, perhaps, of the Roentgen rays, which aspired to a radical cure, all these modes of treatment merely aimed at making the patient's life endurable so long as it lasted. The primary object was, and still is, to reduce the weakening hemorrhages and to check the intolerable stench of the discharge. Yet, our pitiable helplessness in this respect can not be better illustrated than by the fact that two surgeons (Gottschalk and Kuestner) independently of each other, devised an artificial occlusion of the vagina (colpocleisis) as a last, though but temporary resort.

It is this distressing odor that has defied all our efforts. It is this odor that, in reality, constitutes the most formidable symptom of the disease, that makes devoted children wait almost impatiently for the death of a beloved mother, and that tends to break up all ties of family and friendship.

For the same reason, such patients are not willingly admitted in a general hospital. In an institution of the nature of the St. Louis Skin and Cancer Hospital, they seriously menace the workings of the hospital. Attending physicians as well as nurses suffer from the unbearable odor, and operable patients or those afflicted with less loathsome forms of cancer are easily driven away.

There was, then, every reason for trying to improve the existing conditions. For the last year and a half I have tried or tested a number of chemicals, without, however, receiving more than a passing encouragement. I may discuss the relative merits of these remedies in a later publication. In this report I merely wish to call attention to a new mode of treatment which thus far has yielded unexpectedly good results, and which in the limited number of cases in which it has been employed, seems to have successfully met the chief requirements in the treatment of inoperable cancer of the uterus.

This treatment consists of the methodical application of acetone. Acetone (Dimethyl-ketone, C_3H_6O) may be found, in traces, in every normal urine, and it increases in fever, with starvation, or with a purely meat diet. It is familiar to the clinician from its occurrence in the urine in cases of diabetes mellitus, in certain forms of digestive disturbances, and in some cases of carcinoma. Recently it has also been found in the urine of patients with ectopic gestation.

Physically, acetone is a transparent, colorless, mobile and volatile liquid of a characteristic ethereal odor and a pungent, sweetish taste. On the skin it causes the sensation of cold. It has found extensive use in laboratory technic for hardening tissues prepared for microscopic examination. Tissues shrink rapidly in acetone owing to its intensely hygroscopic qualities, and, if left in the fluid for more than half an hour they are, as a rule, too hard for the microtome knife.

It was my idea to utilize these laboratory observations for practical purposes. If the ulcerating surface of the cancer could be hardened *in vivo*, the discharge could be checked until the escharotic portion would be cast off. The resulting free surface could then again be hardened. It would perhaps, also, be possible to harden deeper portions or even the entire tumor, thus rendering the malignant growth temporarily harmless.

The treatment should, if feasible, be preceded by a thorough excochleation of the ulcerating area. The curetted cavity or crater is then carefully dried with cotton sponges and from one-half to one ounce of acetone is poured into the wound through a Ferguson or other tubular speculum. For this purpose the pelvis of the patient must be raised as in Trendelenburg's position. The narcosis may now be interrupted and the patient be left in this position for from fifteen to thirty minutes. Next, the acetone is permitted to run out through the speculum by lowering the pelvis of the patient and the cavity is packed with a narrow gauze strip soaked in acetone. The healthy mucosa of the vagina and the vulva are cleansed with sterile water and dried.

After this preliminary curetting and cauterization, the regular treatment which requires no further hospital care, is administered twice or three times a week, beginning the fourth or fifth day after the operation. This is done without narcosis and may be given with the patient in bed or on the ordinary examining chair or table in the office. The pelvis of the patient is raised and the tubular speculum is inserted into the cancerous cavity. With the progressive diminution of the crater, smaller specula are gradually employed. The speculum is filled with acetone and held in place by the patient's hand for half an hour, and is then emptied in the manner described above. Care should be taken to prevent the acetone from running over the vulva or perineum.

The immediate effect of this simple procedure is the following. Any slight oozing is checked almost instantly. The surface of the crater is covered with a thin whitish film; wherever there was an extravasation of blood, the discoloration is light brown. The normal vagina is not appreciably irritated. On the vulvar mucosa and the outer skin an excess of acetone produces a faintly white discoloration which soon disappears. There is no pain from the cauterization, save a slight stinging sensation if the acetone has touched the skin. This, however, passes away rapidly if the affected parts be washed with cool water. In no instance have I been forced to employ any anodynes.

The more remote effect manifests itself in a marked reduction of the intense odor. The discharge, at first, becomes more watery and gradually disappears. With it disappears the former stench. At the same time, the hemorrhages fail to recur—at least in the cases thus far treated. After two or three weeks of this treatment I have noticed a considerable diminution in the extent of the wound cavity. The walls of the latter become smooth and firm. There were no more polypoid excrescences, nor could the finger remove any friable tissue.

Owing to the absence of weakening hemorrhages and discharges, the general somatic condition of the patients improved visibly. On the other hand, sensations of pain caused by the extension of the cancer to adjoining organs or nerve trunks beyond the reach of the acetone, were not relieved; these required now, as before, administration of anodynes. In order to determine if there was any absorption of acetone into the organism, frequent examinations of urine were made both before and during the course of treatment. These examinations have, so far, remained negative.

Of the limited number of cases thus treated, one or two may serve as illustrations.

CASE 1.—Mrs. F. S., aged 42.

History.—Present illness began June 25, 1906, with profuse hemorrhages, for which she was frequently "cauterized" by a physician in Texas, yet oozing and watery discharge continued, and she grew rapidly weak and anemic. She came to St. Louis and was curetted in another hospital on Oct. 14 and

Nov. 30, 1906, without relief. She had persistent bloody discharge, severe pain in the lower abdomen which prevented sleep, and dysuria. On Jan. 20, 1907, the patient was admitted to St. Louis Skin and Cancer Hospital. She was greatly emaciated and unable to walk.

Examination.—Pulse was rapid and hardly perceptible. Anemia was excessive. Hemoglobin, 35 per cent.; erythrocytes, 2,907,000; leucocytes, 33,320.

Urine: Specific gravity was 1004, and the urine contained large quantities of albumin and blood corpuscles.

Abdomen: The lower abdomen was filled with a hard, immovable tumor which extended one inch below the umbilicus. Within the vagina, about one inch above the entrance there was an annular constriction, beyond which the examining finger entered a wide cavity, the sides of which apparently were formed by the pelvic walls. This cavity was filled with soft, friable masses which seemed to project from above downward. There was a profuse watery, foul discharge which soon took on the character of a hemorrhage. Excessive pain prevented further exploration.

Diagnosis.—Fibroid of uterus and carcinoma of cervix.

Operation.—On Jan. 24, 1907, under ether narcosis, a thorough excochleation of the extensive cavity was done. The soft masses within were largely necrotic and greenish in color. A large amount of tissue was removed by the curette. The cavity was packed with gauze saturated with acetone. The condition of patient was alarming and stimulants were necessary. A microscopic diagnosis of carcinoma was made.

Postoperative History.—Jan. 25, 1907, the dressing was removed. The patient was comfortable. By February 7, 1907, she had been receiving acetone treatment of one-half hour's duration three times a week. There was no odor in the room, there was no hemorrhage, and only very slight discharge. The patient had not had sufficient pain to require opiates except one night. In the place of the former soft, friable masses, the crater was found to have contracted a great deal and scarcely admitted a finger. The walls were irregular from projecting areas of firm tissue with smooth surfaces which did not bleed.

February 19: Treatments had been continued and patient was gaining in strength and was able to walk about.

February 23: The patient had been having some paroxysms of pain in the abdomen similar to those before entering, but she thought that the pain was not so constant; at times she had several days of freedom. This was not the case before entering hospital, when pain was rather continuous. There was absolutely no odor; at times there was a slight watery discharge. There had been no hemorrhage since the acetone treatment was instituted. The walls of the crater were contracting and were so firm that the examining finger or manipulations with sharp edge of glass speculum did not cause any bleeding. In part the walls were covered with a grayish membrane easily detached and leaving no bleeding site; in other places the walls were clean and bright red, and did not bleed on pressure.

CASE 2.—MRS. R. W., aged 33.

History.—She had been bleeding from the vagina almost continually for the previous three months and had had severe pain in the lower abdomen for about two months. There had also been rapid loss in weight.

Examination.—This revealed a large cauliflower excrescence of the cervix uteri with involvement of the anterior vaginal wall and left parametrium. Local application of lotio panereatis (Fairchild) three times a week, for about two months, failed to give any relief. On Oct. 10, 1906, she was examined by Professor Wertheim of Vienna, during the latter's visit to St. Louis, and he pronounced her condition inoperable.

Operation.—On Oct. 13 and Dec. 3, 1906, a thorough excochleation and thermocauterization was done, followed by slight temporary improvement. A microscopic examination showed carcinoma.

Later History.—On Jan. 5, 1907, she was readmitted to hospital. She had recently had several profuse hemorrhages. There was a stinking discharge, and pronounced cachexia. The tumor at this time involved the entire upper half of the vagina and extended deeply into the left broad ligament. The tissues were friable and bled freely after examination.

January 11: Another thorough excochleation and thermocauterization was done under ether anesthesia.

January 17 to 28: Local application of acetone was made through a tubular speculum every other day. The odor was considerably lessened and there were no hemorrhages. At times there was a pinkish discharge.

January 31: Menses occurred, normal amount.

February 6 to 12: Acetone treatment was continued. There was slight discharge, with no odor and no hemorrhage.

February 21: The patient had been at work constantly prior to this date, reporting three times weekly for treatment. She had good color and there had been no loss of strength in the preceding six weeks. The crater walls had contracted so much that the narrowest speculum could not be inserted readily. The induration extended on the anterior vaginal wall to about 1½ inches from meatus, and on the posterior wall to about 2 inches from the mucocutaneous border. The crater was about 1¼ inches in depth. Its walls were firm and did not bleed on digital examination. The involvement of the left parametrium had not increased, rather the contrary. The entire mass (uterus plus periuterine involvement), seemed somewhat more movable. There was no odor or bleeding.

February 22: Under ether anesthesia the crater was freely curetted, but only a small amount of tissue could be scraped away. The scrapings were firm; bleeding was very slight. This excochleation was in marked contrast to former curettements on the same patient when large quantities of very friable tissues were removed with abundant hemorrhage. The operation was followed by application of acetone.

March 5: Undisturbed convalescence. The patient looked and felt very well. She had been menstruating normally for three days.

March 15: She had received treatment regularly three times a week and felt well. She stated that intercourse was indulged in without any bleeding. The vagina was very narrow. There was absolutely no odor nor discharge. The patient was kept under regular treatment.

EPICRISIS.

These two patients suffered with unmistakable carcinoma of the uterus; clinical manifestations and microscopic evidence tallied. In both patients the disease had long since passed beyond the reach of any radical operation and had even consumed the greater part of the vagina. The condition of both patients was very low, due to persistent hemorrhages, and particularly deplorable owing to the unbearable odor of the ulcerating necrotic surfaces. In both cases, the usual means of treatment had been conscientiously employed for several months, but had failed to bring the slightest relief. The acetone treatment, on the other hand, completely overcame both discharge and stench and reduced the hemorrhages to a minimum.

The enthusiasm with which original methods of treatment for cancer are usually published by their respective inventors stands in crying contrast to the late results as surveyed above, so that we have grown to look on new suggestions with a sort of suspicious reserve. I have, therefore, refrained from permitting the wish to be father to the thought and have, in this preliminary report, limited myself strictly to stating certain observations made with acetone in the treatment of the unbearable odor of inoperable carcinoma of the uterus. Incidentally, the effect of this treatment on the amount of discharge and hemorrhage has been noted. I have given the technic in detail so as to aid those who are willing to afford a fair trial to this new mode of treatment which seems to produce no untoward effect, but which has brought material relief to the patients treated.

I am greatly indebted to my associate, Dr. F. Hinchey, for his interest and assistance in carrying out these investigations.

MYXEDEMA.

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(*Concluded from page 1333.*)

THYROID GLAND.

The size of the gland may be difficult to determine owing to the associated fulness of the neck. In a very considerable number of cases, however, there is a distinct diminution in the size of the gland. In 61 patients of my series in whom the condition of the gland is noted it was atrophied or not palpable in 46 (75.4 per cent.), in 3 of whom it was previously hypertrophied. In the London series it was atrophied in 22 of 59 cases (37.3 per cent.); in 3 it was also previously enlarged. Hun and Prudden[10] found that the gland was diminished in size in 78 per cent. of their cases. In the London series there were 4 patients in whom there was definite hypertrophy at the time of the examination, which, with the 3 in each of the London and American series, in which there was a history of previous enlargement, make a total of 14 patients with hypertrophy of the thyroid gland. *Apropos* of this occurrence, Ord,[31] in 1898, wrote:

> It appears to me probable that we shall recognize in the near future more and more the occurrence of a stage of hypertrophy of the thyroid gland with or without signs of Graves' disease, as an antecedent of myxedema. . . . The enlargement of the thyroid in exophthalmic goiter is due partly to hyperemia and partly to change in the gland, which are apt in certain cases to determine proliferation of the epithelium surrounding the cells, such proliferation ending in the replacement of the true glandular structure by fibrous material and consequent destruction of the functions of the gland.

NERVOUS SYSTEM.

The nervous system is next to the cutaneous system in degree of involvement. But it is rather a functional than an organic derangement, as only in a few cases are these symptoms due to organic changes in the brain and spinal cord. The chief characteristic is a slowness in the execution of all the nervous functions, due, according to Ord, to the condition of the skin which interferes with the natural exposure of the nerve terminals to stimuli from without, and hence a failure of the natural stimulation of the centers.

Cerebral Functions.—Though the intelligence of the patient may be perfectly normal there is a large proportion of cases (37 in my series) in which there is a slowing of cerebration as to apprehension and thought. A prolonged interval may elapse before the nature of a question or command is grasped by the patient. A mental lethargy or somnolence may be present, so that the patient sits for hours at a time in the same position, taking no interest in his surroundings and evidencing no sign of mental or bodily activity. Charcot has likened this condition of apathy to the hibernation of the lower animals. Abnormal persistence in thought may be present.

The memory, especially for recent events, becomes impaired during the early stages. Impairment of memory was noted in 38 per cent. of my series, in 33 per cent. of Hun and Prudden's series and in 65 per cent. of the London cases.

Sleep, as a rule, is good; there may be an excessive somnolence (32 cases), especially in the daytime. In some cases insomnia may occur (14 cases) or the sleep may be disturbed by bad dreams or even actual night terrors (7 cases). The disposition is usually placid, though irritability is not uncommon (13 cases). Periods of placidity may alternate with periods of irritability. There is often a morbid sensitiveness about the personal appearance with a strong desire for seclusion and a dislike for the presence of even the immediate members of the family. Various phobias may occur, especially agoraphobia or fear of open places (5 cases). There is a marked tendency to suspicion and self-accusation, the suspicion is not one of conspiracy or intent to harm, but the patient has a fixed idea that all the world is finding fault with him and regards him unfavorably. Some bemoan all their past sins, real or fancied. Morbid impulses were present in 3 patients of my series. Hallucinations and delusions of both sight and hearing, either alone or in combination, occur in many of the advanced cases (16 cases). Hallucinations of sight are most common. Exalted ideas may be present. Actual insanity occurs either in the form of acute or chronic mania, melancholia or dementia. Melancholia was present in 9 of my series, in 3 with a suicidal tendency. There was only 1 case of mania. The patients in 3 of 13 cases seen by Allen Starr[32] were brought to him on account of some mental aberration. Cases of myxedema are to be found in nearly every insane asylum; such cases of insanity usually terminate in convulsions, coma and death.

SENSORY SYMPTOMS.

Subjective.—Abnormal subjective sensations are common. Most frequently there is chilliness or a great susceptibility to cold, as was present in 59 of 61 patients in my series (96.7 per cent.). It is very frequently described as a sense of a trickling of cold water on the skin, more especially down the spine. Further, patients are usually brighter and more comfortable in warm weather. Very commonly there is a sense of intense fatigue and languor on the slightest exertion (42 cases), so that the most trivial action assumes gigantic proportions and is dreaded by the patient. Various neuralgia pains in the muscles and joints occur. These were present in 29 cases of my series, in 2 of which they were localized to the thyroid region. Headache, especially occipital, is common (25 cases). Various paresthesiæ, as numbness, tingling, formication, itching, etc., are frequent and occurred in 30 cases. Other less usual symptoms are vertigo (14 cases), syncope (3 cases), dyspnea on exertion (20 cases), palpitation of the heart (9 cases) and dysphagia (11 cases).

Objective.—Cutaneous sensibility, as a rule, suffers no actual loss. Delayed sensation has been more commonly noted, and in a few cases to a remarkable degree; yet allowance must be made for the slowness of response to stimuli, owing to the mental hebetude present. In advanced cases actual anesthesia to touch and pain may occur, as was noted in 9 cases of my series. In another 3 cases there was merely hypesthesia. Hyperesthesia rarely occurs (2 cases). Hun and Prudden[10] found cutaneous sensibility diminished in 21, retarded in 10, increased in 4 and normal in 35 cases.

MOTOR SYMPTOMS.

Slowness of all the voluntary movements is very characteristic of the disease, and is rarely absent. There is often some clumsiness, especially in the performance of the finer movements, and there may be actual ataxia (12 cases). The gait is peculiar and almost characteris-

32. Med. News, 1894, lxv.

tic, being of a waddling, shuffling, lumbering nature, well described by Bramwell in the term "hippopotamus-like" (32 cases). Occasionally there is also an unsteadiness and staggering with a great tendency to fall, resulting in fracture of a bone or dislocation of a joint, as occurred with one patient in my American series.

Though actual paralysis is an accident, paresis of the various muscles is relatively common (34 cases). Weakness of the neck with falling forward of the chin on the sternum is often seen in adult myxedema just as in cretinism. Again, the head may fall backward between the shoulders with terrifying suddenness. There is a marked tendency to exhaustion after any prolonged or concentrated effort, and some patients are practically bedridden in the later stages of the disease, and even in the early stages find it impossible to walk a hundred yards or dress themselves without aid. In walking a quivering of the muscles may be seen, and actual tremor (3 cases) or muscular twitching (1 case) are not unknown. A case reported by Stewart[33] presented the interesting complication of tetany, and, as far as I know, is unique in literature. The superficial reflexes are sometimes diminished and in rare instances absent. The deep reflexes are usually stated to be normal, though Hun and Prudden[10] found them abnormal in more than 50 per cent. In my series they were noted as normal in 11, exaggerated in 5 and diminished in 6 cases. The electrical excitability of the muscles was diminished in at least 60 per cent. of the cases of Hun and Prudden. In my series it was noted as normal in 4 and diminished in 3 cases.

SPEECH AND SPECIAL SENSES.

Speech.—Changes in the speech are very constant, and were present in 100 of 104 cases (96.1 per cent.) in the London series, in 104 of 107 cases (97.2 per cent.) in Hun and Prudden's and in 71 of 73 cases (97.2 per cent.) of my series. Slowness is the most marked feature, but inarticulation may be present to a slight degree. Actual aphasia is of rare occurrence. The speech is best described as deliberate, hesitating and monotonous. There is an apparent difficulty in getting words out of the mouth, as they stick at the lips and are only enunciated with a visible contortion of the mouth and lips. Yet, in spite of this difficulty, the patient is often garrulous and will talk for hours in the face of repeated interruptions. The quality or timbre of the voice is characteristically hoarse, thick, nasal or leathery as was noted in 39 of our patients. There is probably a nervous as well as a mechanical cause for this change in the voice and speech, the mechanical cause being the swollen condition of the mucous membrane of the larynx, soft palate, mouth and tongue; the nervous element being the slowness of cerebration and execution of voluntary effort.

Vision.—In a small proportion of the patients (16) dimness in the acuteness of vision was noted. Exophthalmos has been observed in the early stages, probably in association with a pre-existing Graves' disease. The examination of the fundi is usually negative, but there was optic atrophy in 3 of our series—neuroretinitis in 1 and sclerosis of the retinal vessels in 1. In a case of a young girl recently married, reported by Moffitt,[17] there was atrophy of the nasal side of both optic discs, with limitation of color vision in the temporal halves of both fields. Optic atrophy has been ascribed by Uhthoff and Moffitt to a possible association of an hypertrophy of the hypophysis cerebri.

33. Am. Jour. Med. Sci., 1889, xcviii.

Hearing.—Hearing was impaired in 25 of 32 cases (78 per cent.) in which this point was noted in my series. It may be unilateral or bilateral. In some it may be simply coincident, but in the majority it is due to the disease. Hammond[9] thought it might be caused by an actual diseased condition of the auditory nerves. Subjective auditory sensations, as tinnitus aurium, occurred in 6 of my patients and in the patient in Case 7 to a distressing extent.

Taste.—Taste is often impaired (9 cases). Perverted subjective sensations are also common (6 cases). A bitter, acid or metal-like taste may be constantly present. Taste was noted as normal in another 6 cases.

Smell.—Smell may also be impaired or perverted, as occurred in 7 out of 13 patients in whom this point was noted. Hun and Prudden[10] found that taste and smell were impaired in about 33 per cent. of their series.

CIRCULATORY SYSTEM.

Temperature.—The temperature is nearly always 1 to 3 degrees (Fahrenheit) below normal when the disease is well advanced. In the early stages it may be normal or even one to two degrees above. In a well-defined case a temperature of 98 to 99 F. is an indication of fever. In 75 cases in my American series it was normal in 15 patients, subnormal in 58, slightly febrile (99.4) in one in whom the symptoms of myxedema had followed those of Graves' disease, and decidely febrile (102.5) in the patient with acute myxedema reported by Osler.[30] Of the subnormal cases there were 6 patients in whom it ranged between 93 and 96 and 15 between 96 and 97. In the London series there were 10 patients in whom the temperature ranged between 93 and 95. Hun and Prudden[10] reported a subnormal temperature in 90 per cent. of the cases and one case in which the temperature fell to 66 before death.

Pulse.—The pulse can be said to have nothing very distinctive, though in the majority of the cases it is slow and small or weak. Thus it was found to be below 80 to the minute in 35 and between 80 and 100 in 18 cases. In 3 of my cases the pulse was rapid, in two of which there was an associated enlargement of the thyroid gland, and in the third the course was one of acute myxedema.

Blood Pressure and Blood Vessels.—The blood pressure was said to be below normal in 3, normal in 1 and above normal in 2 cases. The heart was found to be normal in 54 per cent. of the London series and in 40 per cent. of Hun and Prudden's cases. The latter found cardiac hypertrophy, aortic accentuation or a reduplication of the heart sounds in a considerable number of cases. In long-standing cases the heart is said to become weak from myocardial degeneration. It is important to remember that in these cases the cardiac degeneration does not improve as rapidly under thyroid treatment, as the general condition and an unusual effort may lead to sudden fatal syncope. Cases of this accident have been reported by John Thomson and Murray. The condition of the heart and vessels was not specially studied in my series. In 2 cases, however, cardiac hypertrophy was noted. There is no special tendency to arteriosclerosis; it was noted only once in my series. The capillaries on the face are usually dilated.

Blood.—The blood shows usually early in the disease a mild secondary anemia, with consequent slight pallor of the mucous membranes. This disappears as the general condition of the patient improves. Hun and Prudden[10] found that in about 70 per cent. of 17 cases there

was a deficiency of erythrocytes or an excess of leucocytes. In an analysis of 23 cases by Murray[11] the blood count was normal in 7, there was a reduction of the erythrocytes in 10, an increase in both erythrocytes and leucocytes in 2, and an increase in leucocytes alone in 4 cases. The hemoglobin is found by most writers to be 10 to 15 per cent. below normal. In 12 cases in my series the hemoglobin was normal in 2, between 50 and 75 per cent. in 8, and below 50 per cent. in 2 cases. The erythrocytes, according to a recent article by Lindner,[34] have been found normal by Erb, Kraepelin and others. Ewald and Harris Wright, on the other hand, have reported cases in which the count was 5,600,000 and 5,970,000 for each cubic centimeter, respectively. Again, Lebreton reported a case with only 1,750,000 and Grunder 2,100,000 red cells for each cubic centimeter. In 19 cases in my series the red cells were estimated. In 15 cases the count was between 3,000,000 and 4,500,000, the minimum count being 3,104,000 for each cubic centimeter. In one case it was between 4,500,000 and 5,000,000. In 3 cases it was above 5,000,000, being 5,800,000 in one, 5,030,000 in another and 5,112,000 for each cubic centimeter in a third. In the first of these cases reported by Fritz,[35] the hemoglobin was only 35 per cent.

The leucocytes are usually normal in actual numbers as well as relatively, as shown by the differential count. They were estimated in 11 of my series and were normal (5,000 to 10,000) in 7, slightly above normal (11,600 for each cubic centimeter) in one, and below normal in 3 cases. In 4 cases the differential count revealed nothing abnormal.

Hemorrhage.—Hemorrhage from the various mucous surfaces is one of the most common antecedents as well as coincidents of the disease. It is usually from the uterus, nose, throat or gums. Hemorrhage into the skin or from the bowels is less common. Cerebral hemorrhage is the most serious form. Ord,[31] in 1898, had seen 3 cases of cerebral apoplexy. An unusual retardation in the process of healing in wounds of myxedematous subjects has also been noted.

In Hun and Prudden's series hemorrhage occurred from various regions in 83 per cent. of the cases. In my series hemorrhage occurred in some form in 23 of 27 cases (85 per cent.), from the nose in 2, mouth in 2, gums in 5, throat in 1, bowels in 3, bladder in 3, and from the uterus in 9 cases. In only 1 case were there cutaneous ecchymoses. In another case there was a definite retinal hemorrhage. There was a cerebral hemorrhage with hemiplegia in a case reported by Craig.[36] In another case a cerebellar hemorrhage was found at autopsy.

THE ALIMENTARY SYSTEM.

The condition of the teeth and tongue has been previously noted. The appetite is usually good (16 cases), but is often impaired (17 cases). It may be capricious and actual bulimia may occur (3 cases). In one case reported by Campbell[37] there were attacks of great hunger every hour, in association with profuse sweats. Excessive thirst was also noted in one case. Indigestion may occur (12 cases), though, as a rule, digestion is normal. Nausea (3 cases) or even actual vomiting (3 cases) may occur. In one of the latter there was vomiting of large quantities of mucus, on one occasion as much as nine pints in the 24 hours. As has been noted, slight dysphagia occurred in 11 cases.

The bowels may be regular (11 cases), though they are usually constipated (32 cases, or 58 per cent.). Diarrhea is not infrequent (8 cases) throughout the course of the disease, or, as sometimes happens (4 cases), constipation may alternate with or be followed by attacks of diarrhea. It is stated that crises of diarrhea may occur in association with profuse sweats and vertiginous attacks. In 2 cases there were attacks of incontinence of feces as well as of urine. Hemorrhoids, said to be not uncommon, were noted but once in our series.

RESPIRATORY SYSTEM.

Apart from dyspnea on exertion (20 cases), there are no respiratory symptoms of note, though death occasionally occurs from some pulmonary complication.

GENERATIVE SYSTEM.

The external genitalia in both sexes may be swollen and dry and the pubic hair scanty. There is no great tendency to loss of sexual power (1 case), though there is a greater tendency to loss of sexual desire (6 cases). Pregnancy may occur during the course of the disease, though this is not the rule. In my series pregnancy occurred shortly after the onset of the disease in one case and during the full height of the disease in another case, both of which went to term. In such cases severe postpartum hemorrhage is apt to occur. In a third case pregnancy was followed by abortion during the fifth month. Pseudocysis, due to enlarged pendulous abdomen and amenorrhea, has been noted by Davis.[38]

The Catamenia.—The catamenia is sometimes stated to be regular. Such was not my experience. In only 9 cases was the menstrual function regular; in another 9 it was noted as irregular or scanty in amount; in another 22 cases there was loss of the flow, in 5 of which the flow returned with restoration to health; in 2 cases artificial menopause had been produced before the onset of the disease; in another 8 cases the menopause occurred shortly before or at the time of the onset of the myxedematous symptoms; lastly, in 7 cases the appearance of the disease was followed by the persistent absence of the menstrual function. The tendency of menorrhagia and metrorrhagia has been referred to under the section on hemorrhage.

URINARY SYSTEM.

Frequency, incontinence and dysuria do occur, but are rarities. In the early stages of the disease the urine itself is normal. Later the total daily output may be diminished (6 cases), increased (6 cases) or normal (3 cases). As the disease advances, the specific gravity is commonly below normal (i. e., below 1.015) as occurred in 15 of 38 cases (39.5 per cent.) of my series. Albuminuria may occur in the later stages of the disease as a direct result of myxedema itself or from an actual disease of the kidneys, when casts are usually present.

Albuminuria was present in 20 of Hun and Prudden's cases. In my series it was present in 26 of 72 cases (36 per cent.), though in only 7 cases did the albumin exceed a trace in amount. Casts were noted as present in 16 of 49 cases (32.9 per cent.), in three of which no albumin was present. The urea excretion is stated to be diminished.

My figures are too small to draw any conclusion, as the urea output was given in but 5 cases, in 3 of which it was diminished.

34. "Kasuit. Beit. z. Myxoldemfrage," Halle, 1904.
35. Am. Jour. Med. Sci., 1898, cxvi.
36. Ibid., 1894, cvii.
37. Montreal Med. Jour., 1888-89, xvii.
38. Phil. Med. Jour., 1901, vii.

Albumosuria.—This occurred in one of my series, a case reported by Fitz,[38] in which from .25 to .12 per cent. of albumin was demonstrated by the usual tests. von Jaksch has also reported a similar case.

Sugar.—Lorand, in his recent monograph on glycosuria, points out that in myxedema, unlike exophthalmic goiter, diabetes is a rarity. A few cases have been reported in which a true diabetes mellitus occurred in the course of the disease. In 1895 Ewald[39] reported the history of a woman, aged 55, in whom a cure of the myxedematous symptoms by thyroid extract was followed by a mild glycosuria. In my series in one case reported by Osler,[40] in 1899, and previously referred to, there was a glycosuria complicating acute Graves' disease associated with myxedematous symptoms.

In infantile myxedema, diabetes has also been reported. Gordon[40] has published the histories of two brothers who were congenital cretins, in whom glycosuria developed and was benefited by the administration of thyroid extract. Strasser,[41] also of America, has more recently reported a remarkable case of a congenital cretin who, after 4 weeks' intermission from thyroid treatment, developed a marked polyuria and glycosuria, with all the symptoms of diabetes mellitus.

It must also be recognized that glycosuria may in rare instances develop after the prolonged or excessive use of thyroid extract, when a condition of hyperthyroidea, analogous to that of exophthalmic goiter, may occur. Bottman found that 55 per cent. of 20 patients with maladies other than myxedema developed a temporary glycosuria under the experimental administration of thyroid extract. On the other hand, Scholz, among 100 cases of cretinism, was unable to produce by thyroid administration a single case of even alimentary glycosuria. What is the significance of diabetes occurring in the course of myxedema? Pineless and Strasser both point out that in the course of myxedema functional or even anatomic changes in glands other than the thyroid, as the pancreas, for example, may supervene.

DIAGNOSIS.

The diagnosis of myxedema can almost be made at a glance, the clinical picture being pathognomonic. The solid edema with the characteristic facies, the condition of the skin and the hair, the mental hebetude, the slowness of thought, speech and action, the subnormal temperature, all form a train of symptoms that can not be mistaken for anything else.

OBESITY.

If the condition be thought to be one of obesity, the therapeutic test of the exhibition of the thyroid extract can be resorted to.

BRIGHT'S DISEASE.

Three of the cases in my series were mistaken for this. In chronic nephritis the edema is in the dependent portions of the body and is determined by gravitation, or it appears where the tissues are loose; further, it pits markedly on pressure. The skin is thin and smooth and glossy. The complexion is pale, in striking contrast to the hectic flush of myxedema. Lastly, the urine always shows signs of more or less serious renal disorder.

TROPHEDEMA.

Trophedema or "dystrophie edémateuse" may offer more difficulty. This condition has been well described by Meige,[42] Rapi,[43] Hertoghe[43] and other French clinicians. It is characterized by the appearance of a white, firm, painless edema occupying one or more segments of one or both of the upper or lower limbs (preferably the latter), persisting throughout life without appreciable prejudice to health. It may be familiar, hereditary or even congenital. Sometimes it occurs sporadically. Occasionally there is disturbance of sensation. Trophedema is probably of nervous origin and is analogous to muscular dystrophy. In America, Ruhräh[44] reported the case of a girl with myxedematous-like swelling, which the author now believes can be best described as trophedema.

DERCUM'S DISEASE.

Dercum's disease,[45] adiposis dolorosa, can be distinguished, first, by the presence of large, irregularly distributed, fatty tumors which are painful and very tender; secondly, by the sensitiveness of the nerve trunks, and, thirdly, by the reaction of degeneration on electrical stimulation of the muscles. The absence of sweat, the headache and the mental changes simulate myxedema very closely.

PERNICIOUS ANEMIA.

Myxedema has been mistaken for pernicious anemia, owing to the prostration, diarrhea and mental lethargy. The absence of the characteristic blood picture and the chronicity of the course should clear up the diagnosis.

COURSE OF DISEASE.

The course is generally slow and progressive, often lasting for years. The average course for cases in my series was 5 years and 9 months. Twenty-five lasted 10 years or more, the longest case being 15 and 16 years, respectively. Murray found that the average duration in 248 women was 7 years and in 32 men nearly 6 years. Sometimes, even in the absence of thyroid treatment, periods of improvement occur, suggesting an arrest of the disease.

MODE OF DEATH.

In a certain number of cases death is the direct result of the myxedema either from general physical or nervous exhaustion, severe anemia, coma or mania. In a few cases cerebral or cerebellar hemorrhage has been the cause of death. The majority of patients however, die from some intercurrent affection as tuberculosis, pneumonia, nephritis or pericarditis. Hun and Prudden[10] found the cause of death to be exhaustion and pericarditis, each, in 1 case; coma in 6, and pneumonia in 4 cases. In my series there were 10 deaths, of which the mode was not stated in 2; coma in 2 cases, asthma, sudden syncope, pneumonia, purulent bronchitis, edema of the larynx, each, in 1 case, and glycosuria melena and mania in another case.

TREATMENT.

GENERAL HYGIENIC.

An important element in the treatment is the maintenance of body warmth, which is best secured by moving to a warm climate and by the wearing of warm clothes. The bowels must be regulated and a good, nutritious diet provided.

MEDICINAL.

Until 1893 a great many different drugs were advised, and, as is always true when such is the case, none of

39. Berl. klin. Wochschr., 1895, xxxii.
40. American Medicine, 1904.
41. THE JOURNAL A. M. A., 1905, xliv.
42. Nov. Iconographie de la Salpêtrière, 1899, xii.
43. Ibid., 1901, xiv.
44. Maryland Med. Jour., 1897-98, xxxviii.
45. Am. Jour. Med. Sci., 1892, civ.

them were of especial value. Various tonics, as iron, quinin, hypophosphates, were tried. Diuretics and diaphoretics were also used. Jaborandi and pilocarpin given over a long period of time have in some cases proved of benefit, depending, according to Davies,[46] not on their action on the skin, but on their tending to increase the secretion of the thyroid gland. Nitroglycerin and a host of other remedies had their day.

THYROID THERAPY.

Byrom Bramwell[47] says it is no exaggeration to say that the cure of myxedema by thyroid treatment is one of the greatest therapeutic achievements of this or of any other age.

As early as 1883 thyroid grafting was performed by Kocher, and later by Bücher, by transplanting the gland of a sheep into the tissues or body cavities of the patient. But it was found that the gland was soon absorbed. In 1890 von Eiselsberg noted that the transplantation of the thyroid gland from an animal to a patient would prevent the development of cachexia strumipriva in cases in which a complete thyroidectomy had been performed. In the same year Victor Horsley independently of von Eiselsberg suggested the procedure for a patient suffering from myxedema. But all met with the same fate until MacPherson on one occasion succeeded in transplanting the gland of a sheep into the subcutaneous tissues beneath the breast, where it became vascularized and functionally active, so that the patient was free from all symptoms three years later. This method is unquestionably the ideal treatment, and Victor Horsley has recently advocated its trial in cases of postoperative myxedema, having previously instituted a course of thyroid therapy until all the symptoms have disappeared, when the transplantation can be attempted with more hope of success. In 1891 Murray[48] of Newcastle first used with great success hypodermic injections of the glycerin extract of the thyroid gland of the sheep. In the following year Howitz of Copenhagen, and Fox and Mackenzie of England found that the exhibition of the thyroid gland by the mouth was as efficacious. The gland may be given raw or lightly cooked in doses of one-eighth of a lobe to one lobe of the sheep's thyroid once a day. The liquid glycerin extract may also be used, of which 90 minims correspond to one gland; hence the dose varies from 3 to 20 minims. The next advance was the preparation of the dry or desiccated extract, which has been put up in powder, pill or tablet form. Of all the preparations the tablet is the most convenient and keeps better, hence is the most efficacious. Parke-Davis, Armour and other firms have their own tablets. The Burroughs and Welcome tablets from England are probably the most reliable.

Rules for Administration.—The first thing to determine is the most suitable constant daily dose of the drug: this can only be done by trial and must be determined for each case. It is best to begin with a small dose (one five-grain tablet, or two grains of the extract) once a day, and gradually increase in frequency and in amount until the symptoms begin to subside. This stage of the treatment has to be carried out with great care in all cases in which the disease has lasted for some years, in the aged and in those who show any indication of arterial or cardiac degeneration.

Murray[11] says: "The patient should be kept at rest in bed for a time so that as little strain as possible may be thrown on the heart and arteries." Sudden death has been reported in such cases following sudden overexertion (as occurred in Case 78 of my series). The duration of the first stage of the treatment should be from 6 to 12 weeks for the advanced cases. Any undue acceleration of the pulse, as an increase of from 10 to 20 beats a minute, indicates over-dosage. Further, a rise of temperature of one degree above normal, vomiting or purging are also danger signals of thyroid poisoning. Extreme prostration, headaches, sweating and irritability are some of the other indications of the toxic effect of the drug, which in many ways are remarkably similar to the toxic symptoms of exopthalmic goiter in which one also has a condition of hyperthyroidism.

In my series of 76 cases, over-dosage was noted 13 times. In one patient a very great intolerance to the drug was experienced; at first even one grain a day caused a marked systemic disturbance. After 6 to 12 weeks of this first stage the frequency of the dose may be reduced. The minimum dose has also to be determined by trial. Many find one tablet a day necessary, while others are free from symptoms with one tablet every two or three days. If the extract be discontinued for any time there is a return of the symptoms as occurred in 3 cases of my series.

Effects of Thyroid Treatment.—The first effect noticed is the rising of the body temperature to normal. Next there is a gradual or even sudden diminution in the subcutaneous edema with a consequent loss in the body weight. Loss of weight was noted in 24 of my cases, and varied greatly in different cases; in 12 patients it was 20 pounds or over, in 4 of whom there was a loss of from 35 to 60 pounds in from 3 to 16 weeks. Ord[25] belives that during the disappearance of the edema some important metabolism of a nitrogen-containing substance occurs. There is also a restoration of the secretion of the skin which becomes moist and soft and loses its harsh, dry, roughened character. Very frequently the old skin is desquamated in the form of large flakes until an entirely new epidermis is exposed. The hair begins to grow in the form of a fine thick crop over the scalp, pubes and axillæ. The menses return to their normal regularity and quantity. The urine is sometimes considerably increased in amount, as was noted in two of my patients, and the albuminuria and cylindruria disappear. The anemia, however, may not clear up, nay more may be increased and be accompanied by the appearance of a true edema of the feet. Both these, however, usually disappear in a few weeks when the patient gains his normal strength. With the physical improvement there is a corresponding improvement, *pari passu,* in the mental and nervous symptoms. In some cases actual insanity has been cured. The expression brightens, the mind becomes active and the patient begins to take an interest in his or her environment and will shortly return with zest to the daily routine of life. When such a change in the bodily and mental condition of the patient occurs in a few short weeks, one is almost forced to conclude that the day of miracles has not passed.

Parathyroid extract has been tried by Hutchinson,[49] of London, in myxedema without benefit, though in experimental work with dogs, no myxedematous symptoms occurred unless the parathyroids were removed along with the thyroid glands. Protonuclein and a

46. Internat. Clinics, 1893, III.
47. Clinical Studies, 1903, I.
48. Brit. Med. Jour., 1891, II.
49. Ibid., 1896, I.

preparation known as "thyroid-colloid" were tried in one case each, but without any apparent success.

PROGNOSIS.

The prognosis in the untreated cases is most unfavorable. Of 64 cases that were followed by the London committee, actual recovery occurred only once in a case of two and one-half years' duration. Hun and Prudden[19] found only 2 cases reported to have ended in complete recovery without treatment, and in both the diagnosis was questionable.

In 2 cases reported by Köhler due respectively to syphilis and actinomycosis of the thyroid gland the patients have recovered under potassium iodid. In but few diseases has the outlook been so materially altered by the discovery of a specific drug, as has myxedema by the introduction of the thyroid treatment. Formerly the course was progressively downward and the ultimate termination was invariably lethal. Since the introduction of thyroid therapy, however, if treatment be commenced early and if there be no complications, life should not be appreciably shortened. In severe cases of long duration in which the stage of shrinking in the gland has far advanced the outlook is not so good. Advanced cardiac or arterial degeneration is a source of great danger and thyroid treatment has in such cases been followed by death. If cylindruria or albuminuria or both persist in the urine after thyroid treatment, the prognosis depends on the extent of the kidney involvement.

In my series of 100 the result was given in 95 cases. It was thought better for the sake of comparison to divide the cases into two groups. The first group includes the cases treated by medical means before the introduction of the specific therapy; and the second the cases treated since the value of thyroid extract has been appreciated. In Group 1 there are 19 patients with 5 deaths, 10 unimproved and 4 said to be improved. The mortality was therefore 26.3 per cent. In Group 2 there were 76 patients with 5 deaths, 2 unimproved, 9 improved, and 60 cured. It is but fair to add that of the 5 patients who died, in one the diagnosis was made too late for treatment, a second had acute myxedema, a third showed tuberculosis of the adrenals at autopsy and a fourth died from a sudden syncopal attack during the thyroid administration. In only one case did the patient succumb after a prolonged treatment of four months. It would seem permissible, therefore, to omit the first two of these cases, making 3 deaths in 72 cases or a mortality of 4.1 per cent., a rather remarkable drop from 26 per cent. of the first group. Of the 2 unimproved cases, no data were given in one case and in the second the patient was treated for but six weeks with a preparation which was in all probability not the thyroid gland.

Of the 9 patients who were reported improved, one was treated by homeopathy; two were reported before any marked result could be expected; a fourth was well physically but not mentally. Of the remaining 5 either the data are scanty or the diagnosis seemed more or less questionable. Sixty patients out of 76 (79 per cent.) were completely cured.

Epileptic Colonies.—The epileptic colony is a success. It has been shown to be a great public economy, the fruit of good statesmanship.—H. T. Patrick, M.D., in *Charities and the Commons.*

SOME PERSONAL EXPERIENCES IN THE USE OF ELECTRICITY IN OPHTHALMIC PRACTICE.*

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This report will be limited by request to the use of the galvanic and the form of alternating current known as the sinusoidal. That the subject of electricity in ophthalmic practice has received scant attention appears from a statement by the secretary of this section, Dr. Bulson: "For several years the subject has received no consideration. In 1898 Dr. Starkey read a paper on 'The Use of Galvanism in Pterygium,' and Dr. LeMond on 'The Value of Faradism in Choroiditis.' Since then nothing has been presented except some papers on the galvanic cautery and the magnet."

It is probably safe to say that there is no remedy which causes so varied physiologic manifestations and therapeutic results as electricity. By proper selection of modality, current strength, tension, polarity, length and frequency of application, etc., stimulation or sedation of the nervous and vasomotor systems, muscular contraction, decomposition and destruction of tissue, changes in nutrition and so forth may be produced. This "proper selection" requires a fair working knowledge of the physics and electrotherapeutics of the agent. Ranged on the side of "working knowledge" will be found those (conspicuously neurologists) who are securing recoveries by electric agencies, and have an enlightened faith in still greater future conquests, while, on the side of those who lack this knowledge, are conspicuously ophthalmologists who frankly admit this lack, neglect almost completely the use of electricity, and look askance at electrotherapeutics as the real means of recovery from disease which may have previously resisted the classically authoritative drug habit, and prefer to attribute the result to suggestion, coincidence or the bogey man.

Of all the modalities, galvanism furnishes the greatest variety of useful application to the eye as well as the rest of the organism, while, with the possible exception of radiotherapy, it requires the most skill for its safe and successful administration.

For the most part I have used electricity in chronic cases which are very intractable or usually considered not amenable to medication. In order that results may be properly referred to the current, the diagnosis, when possible, has been confirmed by confrères, other treatment avoided, and in several instances patients had been treated without success by the usual approved methods for long periods.

The cases embraced in this paper are taken from my records, without selection, except to include those treated for a sufficient time to warrant a fair conclusion as to the possibilities of the remedy. For the sake of completeness brief mention will be made of cases previously reported.

A word in regard to the nature and selection of the current used, and the technic of its application:

Previous to 1890 the galvanic battery of zinc-carbon elements, excited by a solution of potassium bichromate, was used, and since then the Edison street current, controlled and measured by the rheostat and meter of the ordinary wall plate.

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

The alternating or sinusoidal current has been taken from a No. 2 Victor transformer, using from 30 to 35 measured volts, and a quantity estimated at 5 milliamperes. As the heat meter is not applicable to so small a quantity, it was thus estimated: With a force of 30 volts taken from the direct current, and the electrodes placed on the lids and the nape of the neck, the meter registered 5 m. a., hence, with the same voltage from the alternating current and the same resistance the current is 5 m. a.

PHYSICAL CHARACTERISTICS OF THE GALVANIC AND SINUSOIDAL CURRENTS.

The maximum voltage of the No. 2 Victor transformer is 70, and the milliamperage probably 1,000. The maximum speed is 2,800 revolutions a minute, and the alternations 5,600. While the current alternates, the sinusoidal wave is unbroken or continuous. Figure 1 represents the wave; Figure A, the galvanic.

In the absence of any tracing of the wave from the dynamo, I am not convinced that it is perfectly sinusoidal. Still, it is probable that a similar therapeutic effect may result from a wave that lacks its perfect symmetry. The galvanic current is used when its electrolytic property is desired to separate chemically the elements of a pathologic body, and when its polarity may be utilized as a sedative or a stimulant to the muscular, vascular and nervous tissue. For example, in consecutive optic atrophy, galvanism is especially indicated, on account of the existing exudates, while in primary atrophy I much prefer the alternating current, as it ap-

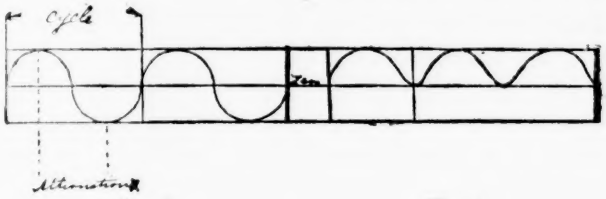

Fig. 1. Fig. A.

pears to be more stimulating to the nerve, the greater reaction of which is evident by the more intense light flash produced.

This can be shown by comparing a thirty-volt current from the dynamo with a thirty-volt galvanic current. The former is not unpleasant and causes a brilliant mosaic of dark and light, while the latter causes no phosphenes unless the current is interrupted and the burning is so intense that it can not be endured for more than a half minute.

The almost universal opinion that the alternating current has no electrolytic effect seems at least doubtful. A current of thirty volts causes as much decomposition of water as one of 5 m.a. from the galvanic, and potassium iodid in solution is readily decomposed, although with an equal amount of discoloration at each pole.

Since the exposure of the eye to the static, high-frequency, *x*-ray or faradic current causes no phosphenes, such currents probably have very secondary if any value in optic atrophy. The technic is as follows except when otherwise stated: Galvanism is generally applied with a large positive pad, 3x4 inches (to prevent smarting) to the nape of the neck, and the negative pads to the closed lids for ten minutes daily, with a current of from 5 to 10 m. a., generally the latter. Since changing a Schulmeister (German) motor for a Victor (Chicago) only 3-5 m. a. have been used, as the limit of tolerance. The electrodes of the sinusoidal are similarly placed and from 30 to 35 volts, as can be tolerated, used for ten minutes daily.

Fourteen cases are fully reported in the *Annals of Ophthalmology*, July, 1898, and are omitted here.

CASE 15.—Central retinitis, unimproved.

CASE 16.—Paresis of r. inferior and internal recti, and of the sphincter pupillæ. Recovery.

Patient.—Feb. 11, 1902. W. F. S., aged 35, clerk. Seven weeks previously he lost consciousness for four days, during which time the right arm and leg were paralyzed. He then recovered consciousness and the use of the arm and leg. Three weeks later diplopia was noticed; this was increased by looking to the left and down. R. hypertropia, 5°; exotropia, 15°.

Treatment.—Interrupted galvanic current; 5 m. a., negative pole to lids, positive to neck, for ten minutes daily.

February 20, exota 8°, R. hyperta 3°. April 2, exota 1°, R. hyperta 2°. April 26, orthophoria. Binocular field of fixation normal.

CASE 17.—Amblyopia exanopsia. R. E. V. improved from 6″ to 2′.

Patient.—April 12, 1902. J. P. S., aged 37, printer. The right eye has diverged since childhood. V. R. E. is now about the same as it has always been; he can see the tips of the fingers at 6″. Fundus appears normal.

Treatment.—The sinusoidal current to the eye ten minutes daily. Feb. 12, 1903, he can distinguish thumb from fingers at 6′. He is much pleased with the result as he can now see objects approaching from the right side, which enables him to get about the streets more safely.

CASE 18.—Bluish-white atrophy of left optic nerve; slight improvement from light perception.

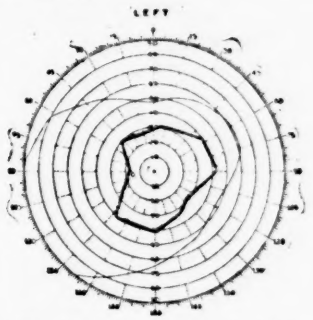

Fig. 2.—Case 19, Feb. 3, 1903.

CASE 19.—Retinitis pigmentosa. R. E., — 1.00, 15° = 20/80; improved to 20/40. L. E., — 1.25, 165° = 20/80; not improved. (Fig. 2).

Patient.—Jan. 29, 1903. Dr. A. B., aged 48, had good sight until an attack of measles in childhood; since then night blindness has prevented him from going out in the evening, and vision has been steadily failing. During the past seventeen years reading or fatigue caused a pain from the frontal to the occipital region, which glasses have considerably relieved. Fundi: Bars and plaques of pigment infiltrated along the peripheral retinal vessels. Family history good. No history of consanguineous marriage.

Treatment.—Sinusoidal current to the eyes daily. On March 2, 1903, there has been no pain in the eyes since treatment.

CASE 20.—Amblyopia exanopsia. R. E. improved from 20/120 to 20/80.

CASE 21.—Sequelæ of specific relapsing iritis. V. R. E. improved from ability to count fingers at 10′ to 20/200. L. E. from light perception to 20/70.

Patient.—Feb. 2, 1904. A. N. N., aged 42.

History.—He had a chancre two years ago in May, 1902; five months later, the left eye was attacked with iritis, and seven months later the right. Vision had been good previous to these attacks. He was under the care of an oculist for five months, beginning a week after the attack in the left eye. Hydrarg. and potassium iodid were prescribed. He has taken iodid of potassium up to the present time. At the end of five months, with the right eye he could see to read a letter, but with the left he could not see a hand.

Second Attack.—This occurred August, 1903, in the right eye, and continued two months without treatment. Vision has remained as at present during the past three months. R. E. V. = counting fingers 10′; L. E. has light perception. Under atropin: Pupil of R. E. 3 mm.; pupil of L. E. 2 mm. Fleecy opacities in each vitreous. Retinal vessels and discs invisible. In fixation at 6″ the left eye diverges.

Treatment.—Galvanism ten minutes daily, the negative pole to the nape of the neck and the positive to the lids.

March 7, 1904: R. E. V. = 12/200; L. = 20/200.

April 4, 1904: R. E. V. = 15/200; L. = 15/120. The sinusoidal current to the eyes. Galvanism discontinued.

April 19: R. E. V. = 15/120. Discontinue sinusoidal current to the eyes and apply vibratory pneumatic massage with eye cups to eyes daily for five minutes.

May 2: Vision the same. Discontinue massage and apply the high frequency current from coil and Oudin resonator with vacuum electrodes to eyes daily for ten minutes.

May 13: Vision remains the same. Discontinue the high frequency current and apply galvanism. Dionin 5 per cent. daily for five days, then omit it for two days, and repeat.

Oct. 6, 1904: R. E. V. = 20/200; L. E. V. = 20/70.

CASE 22.—Double optic atrophy, probably of cerebral origin. V. R. E. improved from light perception to 20/67. V. L. E. from 20/120 to 20/20.

Patient.—Oct. 3, 1903. L. W., aged 12, school boy, suffered from very severe headache, vomited about twice a week and was very delicate from the age of five to ten. He has been in good health during the past two years. On returning to school September 9 he noticed that he could not see figures well on the blackboard, and for a week past has had to read with his book very near his eyes.

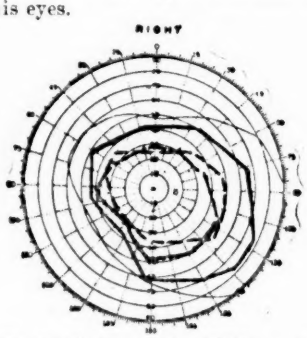

Fig. 3.—Case 22, April 25, 1904. White —; blue — —; red — · — · —

Examination.—Skiascopy: R. E. + 1.00; L. E. — 0.50. Ophthalmoscopy: R. E. very white marginal band with gray center of disc; vessels normal. L. E. opaque white disc; white atrophic choroidal patch to the nasal side of disc and two-thirds its size; vessels normal. (Fig. 3).

Treatment.—Sinusoidal current.

October 23: R. E. V. = Light perception; L. = 20/80.

November 20: R. E. counts fingers excentrically at 6″; L. E. V. = 20/80.

Jan. 7, 1904: R. E. V. = 15/200; L. E. V. = 20/30.

February 4: R. E. V. = 20/120; L. E. V. = 20/20.

March 7: R. E. V. = 20/80; L. E. V. 20/20.

April 25: R. E. V. = 20/70; L. E. V. = 20/20. The papillæ appear as white as when first examined. Treatment discontinued.

Feb. 13, 1906: R. E. V. = 20/50; L. E. V. = 20/20.

CASE 23.—Xanthelasma electrocuted.

Patient.—Jan. 18, 1904. Mrs. A. R. J., aged 37.

History.—Four years previously three yellow patches appeared on the lids, one below the right inner canthus, one below and one above the left. They are at present ⅛″ by ¼″ in size.

Treatment.—Hypodermic cocain. Negative galvanic needle beneath the left upper patch, 3 m. a., gradually increased to five for four minutes, and this repeated with the needle at right angle to first insertion. There was no pain.

January 30: Patch absent; a small crust present. Needle used as above on the remaining patches.

February 20 and April 21: Needle again used.

May 21: Patches absent.

CASE 24.—Tobacco and alcohol amblyopia. Double optic atrophy. V. R. E. improved from 6/100 to 9/100. V. L. E. improved from 4/100 to 9/100.

CASE 25.—Optic atrophy from wood alcohol. V. R. E. ½/100; L. E., 1/100, decreased to ability to count fingers.

Later this patient, supposed to suffer from inhalation only, says he drank wood alcohol, supposing it was ordinary alcohol.

CASE 26.—Impaired vision and headache relieved.

CASE 27.—Intraocular hemorrhage in right eye, with only light perception; unimproved by three months' previous treatment. Recovery, with normal vision.

History.—May 22, 1904. Dr. A. S., aged 39, was taken ill on March 4, 1904, losing consciousness, and on recovering it two days later found that he could only distinguish light. His memory, hearing, and sight remained bad for a week, and then he recovered. Ten days later he had pain in the left eye in the evening, and the next morning both eyes became again blind. Nine days after the first attack the three oculists consulted agreed in a diagnosis of hemorrhage in each vitreous. Later he consulted four oculists, three of whom agreed with the above diagnosis, while one considered the case choroiditis, with exudates. Under treatment the left eye recovered normal vision, while the right eye has only had light perception since the second hemorrhage.

Previous treatment consisted of pilocarpin injections, atropin and dionin, and subconjunctival injection of cyanid of mercury (once). Electricity had not been suggested. The consultants agreed that the vision of the right eye is hopelessly lost. Leucocythemia and acute toxemia had been diagnosed.

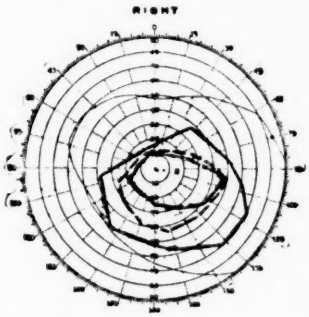

Fig. 4.—Case 28, Feb. 16, 1905. White —; blue — —; red — · — · —

Examination.—R. E. has only perception of light; with dilated pupil the mirror gives no fundus reflex. L. E. V. = 20/20, notwithstanding a considerable amount of fluffy vitreous opacity.

The patient was advised to try galvanism and referred to his oculist, who handed him over to me.

Treatment.—Galvanism with cathode to right lids and current gradually increased from three to ten m. a., for ten minutes daily. After four days fingers could be counted to the right, and four days later in the whole field.

June 7: R. E. V. = 20/67.

June 25: R. E. V. = 20/40, temporarily. He now has annoying diplopia with divergent strabismus, but is assured that this will disappear if vision becomes normal. In April treatment was discontinued.

September 4: R. E. V. = 20/25.

May 11, 1905: R. E. V. 20/20; intermittently = 0.5 (S) at 12″. There is no diplopia. Binocular fixation in reading. Convergence = 10 m. a.

Feb. 14, 1906: R. E. V. = 20/20 fluently = 0.5 (S) at 14″. Vision somewhat clouded by a considerable amount of dust and string opacities in the vitreous. The details of the fundus are distinctly seen and appear normal except as above stated. Advised to renew galvanic treatment.

CASE 28.—Amblyopia (hysterical?) R. E. V. = 20/200, improved to 20/25; L. 20/100 to 20/25.

Patient.—Feb. 15, 1905. Mrs. J. F., aged 44, has never had good eyes.

History.—Five years ago, glasses + 2.25 for distance and + 3.50 for reading were prescribed. Her sight has been failing for nine years. She does not remember the time when she could read without a very good light. (Fig. 4.)

General Health.—She has had more than a dozen voluntary abortions. In 1904 she had two miscarriages without severe hemorrhage, and without affecting vision. Three years ago her sight failed very much after the loss of her husband, by accident, and since then she has been subject to heat flashes and profuse sweating hourly in the day and often in the night, accompanied by palpitation.

R. E. V. = 20/200 + 1.75 + 0.50 180° = 20/200 better; L. E. V. = 20/100 + 1.75 = 20/100.

Treatment.—Sinusoidal current to eyes and general electrization with the auto-condensation couch ten minutes daily.

March 2: R. E. V. = 20/100, slowly; L. E. V. = 20/30. The eyes feel stronger. The flashes, sweating, palpitation and nervousness are very much less.

September 21: R. = 20/50; L. = 20/25. This morning she lost the sight of the right eye for an hour.

Feb. 10, 1906: R. E. V. = 20/25 — 2; L. = 20/25+. At times she can not see to read, and again sees only the left side of words.

CASE 29.—Paresis left internal rectus; improvement.

CASE 30.—Double specific choroiditis with vitreous opacities. R. E. V. 20/70, improved to 20/50, and asthenopia relieved. L. E. V. 20/20.

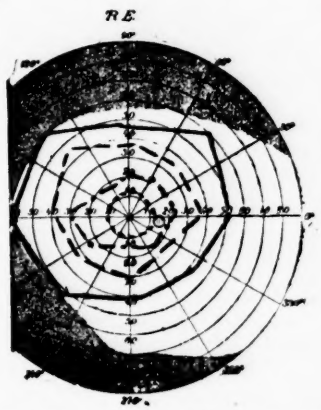

Fig. 5.—Case 39, Feb. 13, 1901. White——; blue — — —; red — - — - ; green - - - - -

CASE 31.—Right optic atrophy. No improvement. L. E. V. 20/33, improved to 20/20.

CASE 32.—Xanthelasma. Removed by electrolysis and excision.

Patient.—Jan. 7, 1903. Mrs. C., aged 36, has four yellow patches, two above and two below each inner canthus.

Treatment.—The negative galvanic needle, 5 m. a., completely removed one patch 2 in. diameter in one sitting. The current was turned on rapidly (without previous anesthesia) and the pain was so severe the patient would not consent to have even a hypodermic needle puncture for further electrolysis, hence the three remaining patches were excised under chloroform.

CASE 33.—Opacities in the vitreous. L. E. V. improved from 20/70 to 20/40 and epiphora relieved.

CASE 34.—Sequelæ of iritis. V. R. E. counts fingers at 8′, improved to 6/50. V. L. E. fingers at 3′, improved to seeing fingers at 10′.

Patient.—June 5, 1900. Mrs. J. B., aged 55, has had repeated attacks of iritis during the past eighteen months.

Examination.—R. E.: Pupil semi-dilated and irregular; floating opacities in the vitreous and capsular opacity. L. E.: Vision failed years ago. There is a large capsular opacity. Pupil normal size.

Treatment.—Galvanism 5 m. a. ten to fifteen minutes daily.

June 22: Twelfth treatment, R. E. V. = 6/50. L. E. V. = fingers at 10″.

CASE 35.—Alopecia of the lids. Improvement.

CASE 36.—Amblyopia. Left eye. Vision improved from 20/120 and 3.00 (S) to 20/80 and 2.25 (S).

CASE 37.—Asthenopia. Relieved by glasses and galvanism.

CASE 38.—Pterygium tenuis, right eye unimproved.

Patient.—April 25, 1901. P. V., aged 29.

Treatment.—Bipolar galvanic needles were used under the pterygium with 4 m. a. for two minutes.

July 18: The pterygium the same. The positive needle applied under the pterygium, 2‴ from the cornea, 2 m. a. for two minutes.

August 8: Positive needle twice inserted under the growth with 2 m. a. for two minutes. This procedure repeated August 15.

September 17: The pterygium appears the same as before the first needling.

CASE 39.—Optic atrophy and retinitis circumscripta. Vision in each eye 15/200, improved to 20/50.

Patient.—Dec. 12, 1901. T. L. S., male, aged 54.

History.—His sight began to fail in February, 1900, when ill with fistula in ano, and it has gradually failed, so that for the last two months he can not read the paper.

Examination.—Fundi. R. E. The disc is bluish-white and blurred on the nasal edge. There is a wash-leather-colored stippling in the macular region.

L. E.: The disc is similar to the right. There are white and red dots in the macular region and also two diameters of disc up and in a similar infiltration. Color vision: He can only distinguish blue (Fig. 5). General health: The fistula

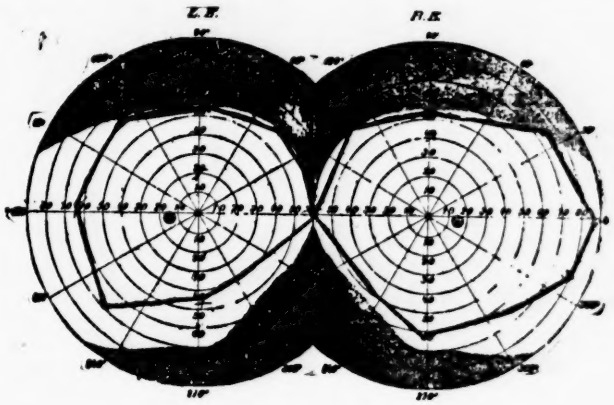

Fig. 6.—Case 41, Oct. 10, 1901.

was operated on and his health is now good. He is subject to chronic rheumatism.

Urine: Normal.

Since a year ago last October he has smoked one-half dozen cigars daily (more than usual) and chewed one ounce of tobacco daily up to July 1, and has not used it since. He does not take stimulants. One daughter died from tuberculosis and one from traumatic spinal meningitis. He lost two uncles from phthisis.

Treatment.—Sinusoidal current applied to the eyes daily.

Jan. 14, 1902: R. and L. V. = 20/200. Mercury and potassium iodid internally. Sinusoidal current continued.

January 23: R. E. V. = 20/200. L. V. = 20/120. He reads a letter now which he could not do when he began treatment.

February 18: R. and L. V. = 20/50 = 0.5″ with reading glasses.

CASE 40.—Double amblyopia, ending in optic atrophy and blindness.

CASE 41.—Double primary optic atrophy. Vision improved from uncertain counting of fingers at 6″ to ability to read and to write her letters.

Patient.—Sept. 3, 1901. Miss E. G., aged 36, school teacher.

History.—Six years previously she became very nervous on account of her inability to secure a certain position, and vision began to fail first in the left, then in the right eye. She noticed words run together and this was not relieved by glasses.

Examination.—Pupillary reaction to light and convergence

normal. She confuses pink and gray with green, and blue with red.

R. E.: Gray-white opaque disc, reticulated at site of physiologic cup and sharply defined.

L. E.: Disc similar to right, but not reticulated. Retinal vessels normal (Fig. 6).

General Condition.—A few weeks before the sight failed she was thrown backward from a cart and hurt her back very much, but retained consciousness. Her memory is particularly good. She is subject to sick headache and is very nervous. Patellar reflex is normal.

Family History.—Her father died of nephritis at the age of 61. Her mother is 68 and healthy. She has two brothers and three sisters living. A brother, 33 years of age, commenced to lose sight at 30 and can not see to read. An oculist whom he consulted diagnosed optic atrophy and was unable to state the cause.

Previous Treatment.—Six years ago she was under the care of a prominent oculist for a year in his private hospital in Cincinnati. He diagnosed optic atrophy and prescribed strychnin hypodermically, baths, general massage, nitroglycerin and general faradism.

Vision did not improve and remained about the same as it is at present, that is, she can count fingers uncertainly with either eye at 6″.

Treatment.—Galvanism daily to eyes.

September 12: R. E. V. = fingers at 14″, L. E. V. = fingers at 12″. She read the headlines of a paper for the first time in six years.

September 30: R. and L. V. = fingers at 24″. Sinusoidal current substituted for the galvanic. The patient at this

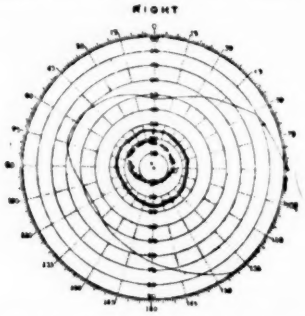

Fig. 7.—Case 41, April 8, 1906. White ——; red and blue — — —

date was exhibited at the Chicago Ophthalmological Society. Dr. Snydacker, who had recently studied four years in European eye clinics, remarked he had not seen so advanced a case of optic atrophy during that time.

October 29: R. E. V. = 1/80 = fingers 4′, L. E. = 1/120 = fingers at 3′.

November 12: In fixation at 12″ the left eye diverges.

Jan. 27, 1902: R. = 1/30, L. = 1/80.

February 10: Vision the same. For some time she has been able to select her own letters from the mail and to answer correspondents. At this date her newly found faith transferred her to the care of the so-called Christian scientists.

CASE 42.—Amblyopia (hysterical). R. and L. V. = 20/80, improved to 20/25.

Patient.—Dec. 17, 1904. M. M., male, aged 10, was referred to me by an oculist.

History.—He was sent from school two years previously on account of failing sight. He had been treated for one year at an eye clinic, but without improvement.

Family History.—His father and paternal grandfather died of apoplexy. His mother died from exhaustion.

Examination.—R. Fundus: Physiologic cup is three times usual size and the vessels emerge very near the nasal side of the disc.

L. Fundus: Similar to right. The boy is exceedingly nervous. The case has been diagnosed as hemeralopia without pigmentation, but night blindness is not complained of and there is no degeneration of the retinal vessels. The small field of vision without optic atrophy is characteristic of hysterical amblyopia, as is also a frequent diplopia.

Treatment.—Sinusoidal current tri-weekly.

March 1: R. = 12/10, L. = 5/100.

April 20: R. = 8/100, L. = 6/100. The fields are concentrically contracted to 20°.

June 24: R. = 14/100, L. = 10/100.

November 28: R. = 14/100, L. = 14/100. Repeat.

December 16: R. = 20/50, L. = 20/67.

Feb. 15, 1906: R. E. = 20/30, L. E. = 20/30.

April 7: R. or L. V. = 20/25.

CASE 43.—Traumatic optic atrophy. V. L. E. = light perception; not improved.

SUMMARY OF CASES TREATED ELECTRICALLY.

Optic Atrophy.—Fourteen patients, 23 eyes. In 5 eyes in which vision = light, 40 per cent. were improved. One to seeing hand movements and one to 20/67.

In 18 eyes in which vision = form. Sixty-four per cent. were improved. Four, 60 to 125 per cent.; two, 300 per cent.; three, 500 per cent.; one, 1,500 per cent.; two from seeing fingers to reading. In six there was no improvement.

Vitreous Opacities.—Seven patients, 12 eyes. In 5 eyes vision = light. One improved to counting fingers at 6 inches; one was unimproved. In 12 vision = form. Ninety per cent. were improved: Seven, 40 to 100 per cent.; one, 200 per cent.; one, 1,100 per cent. In one there was no improvement.

Amblyopia.—Seven patients, 10 eyes. All were improved: Four, 20 to 100 per cent.; six, 200 to 700 per cent.

Sequelæ of Iritis.—Two patients, 4 eyes. All were improved: One from light perception to 20/70; one, 100 per cent.; two, 200 per cent.

Intraocular Hemorrhage.—One eye. Vision improved from light perception to 20/20.

Retinitis Pigmentosa.—One patient, one eye. Improved 100 per cent. One eye was not improved.

Retinal Thrombosis.—One eye. Vision was improved from fingers at 14′ to 6/15 and 0.5 at 12 inches.

Sequelæ Central Retinitis.—One patient, two eyes. No improvement.

Asthenopia.—Three eyes. Recovered.

Xanthelasma.—Two patients. Recovered.

Paresis of Ocular Muscles.—Two patients. One recovered and one was much improved.

Alopecia of Lids.—One patient, improved.

Nictitation.—One patient. Recovered.

Pterygium.—One eye. No improvement.

The recovery of cases Nos. 1, 2, 21, 27, 41, 14 and 23 deserve to be emphasized as phenomenal, especially since in all, except the last two, the patients had been previously treated without improvement.

Thus, contrary to the contention of the erudite and lamented Noyes, and "most oculists" (Burnett), electricity does seem to justify its claim to usefulness in ophthalmic practice.

DISCUSSION.

DR. LEARTUS CONNOR, Detroit, said that in general, as an experimental affair, the use of electricity in therapeutics has been disappointing. Most busy men dislike to take up so much of their time as is required for this treatment. When the first wave of electricity passed over the country Dr. Connor fitted himself out and began the use of electricity with the old apparatus. At present, with the use of the street currents and the improved apparatus for transforming them into any kind of current desired, it ought to be possible to get more definite results. He has had great satisfaction in using electricity, not for gross pathologic lesions, but in the treatment of the muscular and functional disturbances of the eyes. He explains

the good results on the theory that obstruction to nutrition is removed and a more healthy activity promoted. He has been disinclined to use electricity generally. He has obtained good results from it in cases of glaucoma, before and after operation, in cases of iritis and in cases of discomfort that was not relieved by other means. Dr. Connor agreed with Dr. Coleman regarding the necessity of definite methods in the use of electricity and said that he wished some one would tell just what changes are produced in the eyes by its use. If we have to use this agent blindly, unsatisfactory results will be obtained. The matter of idiosyncrasy has to be considered too; one case will be benefited, and another not at all. There is a wide field here about which we know very little and he hopes that some one will be stimulated to investigate the problem further.

DR. H. V. WÜRDEMANN, Milwaukee, declared that the high tension galvanic current is of great value in securing absorption of exudates within the eyeball in cases of choroiditis, and of mild uveitis, and in securing stimulation of nutrition in cases of partial optic nerve atrophy and retinal atrophy. In the first class of cases the positive pole is used to the eyeball; in the second of stimulation. Dr. Würdemann exhibited the visual fields of a case of rotary nystagmus with partial atrophy of the optic nerve and retina. The visual fields were greatly contracted and visual acuity was reduced to 6/60 and 6/36 respectively. After being treated by the interrupted galvanic current for three months they are nearly normal size, visual activity now is full 6/12 in each eye; nystagmus has disappeared.

DR. CHARLES H. WILLIAMS, Boston, said that in order to have a current which is easily controlled and constant he had made a little apparatus which has given him a great deal of satisfaction. It consists of three parts: In the center is a small motor run by the street current. On one side this motor is geared to a generator producing a sinusoidal current, to the other side is geared a generator producing a constant current. By taking the alternating current through the core of an induction coil any strength of interrupted current can be obtained by the movement of the outer induction coil. By altering the strength of the field in the constant current generator, a constant current of any desired strength can be obtained. In this way, from the street current an easily controllable current of any form may be obtained.

DR. E. J. BROWN, Chicago, stated that he has used electricity in his practice and mentioned a case of monocular amblyopia in which he used it. Fixation was perfect, but there was a high degree of refractive error in one eye and a low degree in the other. The patient, a man, had worn correcting glasses for two years, and Dr. Brown found the correction proper. The man had tried it, however, for two years and the eye continued to be a disturbing factor. After three weeks of treatment, three treatments a week, with the sinusoidal current, the eye improved, vision came up from 20/100 to 20/40, and there was perfectly comfortable binocular vision.

DR. S. LEWIS ZIEGLER, Philadelphia, considered it very unfortunate that electricity, which is accomplishing so much in the field of general medicine, and particularly in neural therapeutics, is looked on with such skepticism by ophthalmologists. The few who employ it successfully are enthusiasts, while the many are ignorant, indifferent, or else are rank agnostics. He said that Dr. Coleman evidently belongs to the class of enthusiasts, and that he had submitted a liberal array of facts to substantiate his position. While endorsing most of the observations, Dr. Ziegler differed somewhat in method. The two-fold action of the galvanic current (1) physiologic, and (2) physicochemical, manifested as electrolysis and cataphoresis, should be borne in mind in any endeavor to explain the various electric phenomena observed, and the therapeutic effects obtained therefrom. The anode or positive pole is sedative, and should be applied to all inflammations, while the cathode or negative pole is stimulating, and should be used in atrophy. A notable exception to this rule is glaucoma, in which the negative pole should be employed. This rule may be modified as experience dictates. The constant current yields the best results when the electromotive force is high and the amperage low. Dr. Ziegler generally uses from 60 to 70 volts, and from ½ to 1 milliampere. The seance should last about ten minutes, daily or on alternate days. Occasionally he gives a ten-minute sitting of 1 m. a., followed by a second ten minutes of ½ m. a. Interruption of the galvanic current is useful in certain cases. At times it is of value to combine the faradic current with the galvanic. A higher amperage would require a lower voltage. A stronger current than this would be so painful as to be unbearable.

The eye is such a delicate organ that the apparatus used should be carefully adjusted for the most accurate measurement of these therapeutic currents, and the greatest precision should be employed in their application. The polarity should be easily discernible and kept clearly in mind, as in certain diseases reversal of the current may be painful or injurious, and might mean ultimate blindness for the patient. The milliamperemeter should have a secondary scale, graduated to read from zero up to 5 m. a. In addition to the volt controller placed on the main circuit there should be a small carbon rheostat to cut down the amperage. Dr. Ziegler employs the 90 volt shunt controller as arranged in the Keystone electric cabinet, with a secondary carbon rheostat, and a milliamperemeter in circuit with the patient. The active electrode is constructed with a gold-plated eye-piece, which has proved superior to platinum, a long thin arm and a hard rubber handle that can be comfortably grasped by the patient. The electrode must be well covered with a pad of moistened absorbent cotton, so that the positive current cannot drive the gold off by cataphoric action. The indifferent electrode should be somewhat larger (2 to 3 inches), and is preferably made as a neck pad, the sponge being stitched on thick sheet rubber. This should be moistened and placed inside the patient's collar, the rubber back having first been dried so as to avoid soiling the clothing. As previously mentioned, the positive pole is indicated in inflammatory processes. Thus, the protean forms of uveitis, whether acute or chronic, yield to the positive pole. In plastic iritis, spongy iritis, iridocyclitis, and choroiditis, a marked shortening of the course of the disease will occur. Serous iritis with keratitis punctata, often clears up in from 3 to 6 weeks, while under ordinary therapeutic measures from 3 to 6 months would have been required for convalescence. A case of sclerotitis was relieved from severe pain and photophobia after the first treatment. The positive pole in this case had a decided bleaching effect on the flannel-red eyes, and promptly dissipated the marked congestion. The positive pole is also useful in retinal hyperesthesia, and in retinitis pigmentosa, although in the latter disease a brief change to the negative pole, or to the sinusoidal current, often proves valuable. It is occasionally possible to abort a chalazion, by applying the positive pole.

Dr. Ziegler has always used the positive pole for old, stagnant, intraocular hemorrhages, while Dr. Coleman employs the negative. Doubtless the therapeutic effect, said he, is the same, whichever pole is used. He has seen hemorrhage in the vitreous, causing blindness for over a year, rapidly cleared up to useful vision. In a recent case of subretinal hemorrhage in the macular region three months of alterative treatment had made no apparent impression on the deposit which still remained a bright red spot. Vision, which was 20/200, under positive galvanism showed immediate improvement, and in four weeks he was discharged with a vision of 20/30 and Jaeger No. 2, all hemic pigment having been absorbed. Vitreous opacities are especially amenable to this form of galvanism. In a case in which, after about eighteen months of alterative treatment with the iodids, vision was reduced to 8/200 and Jaeger No. 20, the vision had increased in six weeks to 20/40 and Jaeger No. 2, under positive galvanism.

The negative pole has a smaller therapeutic field, but a no less valuable one. It is most efficient where stimulation is indicated. Its greatest field of usefulness is in optic atrophy. It should be used with great caution, overstimulation or exhaustion being carefully avoided. One of his earliest cases was referred to him with a vision of O. D. 8/200 and O. S. 20/200. The application of the negative current held the vision in the right eye and improved the left to 20/40 and Jaeger No. 4. His colleague, Dr. Radcliffe, reports a case of optic atrophy that has shown steady improvement from light

perception to 20/70. A case of toxic amblyopia from inhalation of the fumes of wood alcohol was restored to almost normal vision and fields after a year's careful treatment. In glaucoma the negative pole will relieve pain and reduce the tension, while the positive will increase both. Dr. Ziegler was able thus to relieve a patient suffering from an attack of acute glaucoma and to prepare her for operation in about ten days. Galvanization of the cervical sympathetic has also proved successful in this disease.

He has tried the sinusoidal current in retinitis pigmentosa and in optic atrophy, but is not overenthusiastic as to the results obtained. He is sure, however, that it has a future, which only needs to be developed.

Electrolysis is, of course, a most valuable therapeutic measure. In trichiasis it is the only successful epilating agent. The needle is placed at the negative pole and the neck pad is made the positive. It is valuable to shrink up small tumors. In trachoma the bipolar needles will give the best results. In ectropion and angiomata Dr. Ziegler prefers galvano-caustic puncture. He has used corneal electrolysis for leucomata, for powder marks and for corneal ulcers with considerable success. He has modified Alleman's electrode by making the tip convex instead of concave and applying it directly to the surface without the intervention of a drop of mercury. Cataphoresis, or the driving of medicaments into the ocular tissues by the positive current, should prove to be a valuable measure. In a patient where a heart lesion contraindicated etherization Dr. Ziegler enucleated an eyeball under a cataphoric application of 20 per cent. cocain for twenty minutes without the patient suffering much discomfort.

Dr. Ziegler concluded by saying that the evidence should convince every careful and unbiased observer that electricity deserves a most honored position in ocular therapeutics.

DR. GEORGE F. KEIPER, Lafayette, Ind., stated that he has tried all kinds of eye electrodes and has found that the best electrode is the human finger. By passing the current through his own body and out through the finger to the patient's eye, the physician will not hurt himself or the patient and will avoid any prejudice the patient may have against the use of electricity.

DR. W. F. COLEMAN, Chicago, said that his cases were chronic ones and he wished to get electrolysis, which is not in proportion to the voltage, but to the milliamperage. In opacities in the vitreous, for example, he uses all the milliamperage the patient will stand, usually ten. Dr. Coleman uses the negative pole in hemorrhage while Dr. Zeigler uses the positive, but stated that results may be obtained with either pole because the current is low so that it makes little difference. In principle, however, the negative pole is used to dissolve tissue and exudates. In optic atrophy stimulation is desired and the negative pole is used. Dr. Coleman agreed with Dr. Connor that the time required is a disadvantage and that it is often difficult to get patients to continue the treatment sufficiently long. He said that it is impossible to give a prognosis of recovery, but that this applies to other methods of treatment as well, though the day may come when we can. Dr. Coleman said that the most favorable cases of atrophy are traumatic, which have not such a serious basis pathologically as tabes, for instance. He said that he considers Dr. Keiper's suggestion as to the use of the finger a good one in many respects, but confessed that he does not wish to spend the time. He might have patients on three different currents at the same time and would not have fingers enough to go round. In regard to regulating the current, he said that the graphite rheostat is unreliable; one may turn on 5 milliamperes and return to the patient in 2 minutes and find that there are 10. He advised getting a metallic rheostat, not made of German wire, but of a combination metal which is much better. A correct meter is also indispensable.

Naming of Carbon Compounds.—Nitro is a prefix indicating the group—NO_2 derived from nitric acid by abstracting OH, thus nitroethane, $C_2H_5NO_2$; nitrobenzene, $C_6H_5NO_2$ Glycerin trinitrate, $(C_3H_5(NO_3)_3$ is often wrongly called nitroglycerin.—*Pharm. Rev.*, August, 1906.

TOXEMIA OF PREGNANCY.*

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The pernicious vomiting of pregnancy, acute yellow atrophy of the liver, and eclampsia, are generally grouped together as manifestations of the toxemia of pregnancy. While eclampsia is admittedly a toxemia, it seems unwise to class it with the other two conditions, from which it differs widely in symptoms, pathology, and prognosis, if not in other respects. For this reason it seems to me that eclampsia should be studied entirely apart from the other two types. I wish it to be understood, therefore, that wherever the term toxemia is used in the present article it refers only to the toxemia responsible for pernicious vomiting and acute yellow atrophy and not to eclampsia unless so stated.

The most pronounced lesion to be found postmortem in a case of toxemia of pregnancy is a degeneration and necrosis of the parenchyma of the liver. While this lesion is characteristic of the toxemia of pregnancy, it is not peculiar to it, since practically the same changes may occur in toxemias from other causes, the difference being in degree rather than in kind. For instance, an extreme degree of hepatic necrosis is brought about by phosphorus poisoning. Similar, though less pronounced changes may occur after chloroform anesthesia, as pointed out by Bevan and Favill[1] and demonstrated experimentally by Offergeld.[2] Müller's[2] experiments go to prove that similar effects may follow the administration of ether and other inhalation anesthetics, though the tendency is much less marked than with chloroform. Acute alcohol poisoning has been known to produce fatal necrosis of the liver, as noted by Quincke.[3] These are examples of hepatic necrosis caused by chemical substances. As an instance of a similar process due to a vegetable poison, Quincke mentions the occasional occurrence of liver necrosis as a result of mushroom poisoning. The liver changes in yellow fever consist of a degeneration and necrosis, not essentially different from that caused by the poisons mentioned above.

The experiments of Traube, quoted by Lusk,[4] would appear to prove that necrosis of the parenchyma of the liver may be brought about by an excess of bile acids in the blood. This information must be accepted second-hand, if at all, since the reference to Traube's article is not given by Lusk. Traube's experiments might well be repeated with a view to confirming his results. If his observation is correct it throws light on some of the obscure deaths in coma following operations for common duct obstruction. It would also appear to offer a possible explanation of the pathogenesis of acute yellow atrophy of the liver occurring in males and nonpregnant females. It would be reasonable to suppose, for instance, that ordinary catarrhal jaundice, when occurring in an individual whose liver is excessively intolerant of the presence of bile acids in the blood, may induce necrosis of such a liver in the same way as the various poisons already mentioned. This would be an example of hepatic necrosis due to the absorption and subsequent poisonous effect of a physiologic secretion. It will thus be seen that necrosis of the liver parenchyma

* Read before the Southern Surgical and Gynecological Association, Baltimore, Dec. 11-13, 1906.

1. Acid Intoxication and Late Poisonous Effects of Anesthetics, THE JOURNAL A. M. A., Sept. 2-9, 1905.
2. Archiv. f. klin. Chir., 1905, lxxv.
3. Nothnagel's Ency. of Prac. Med., 1903.
4. Science and Art of Midwifery, 1893.

may be caused by a variety of toxic substances, besides those peculiar to pregnancy.

PATHOGENESIS.

The source and nature of the toxins which give rise to the fatal liver changes in pregnancy have been the subject of much theorizing, but so far without definite results. The gastrointestinal tract, the liver, the kidney, the ovary, and the ovum,[5] has each been designated as the source of the toxins, but this entire aspect of the subject is still in so much doubt that it is hardly worth while to go into a discussion of the merits of any particular theory. It is sufficient to say that, whatever its source, it is generally conceded that there is a toxin in the blood which is responsible for the morbid process in the liver.

While little or nothing is known of the source or nature of the toxins which cause the hepatic lesions, something more definite is known of the nature of the lesions themselves. Salkowski's classic experiments on autolysis of the liver were followed by Liefmann's[6] observation of the similarity of the liver changes in fatal cases of toxemia to those of the autolyzed liver. Furthermore, some of the products arising during the self-digestion of the organ, such as leucin and tyrosin, are also present in the blood and urine in many of the fatal cases of toxemia. There is good reason to believe, therefore, that the liver changes in cases of toxemia are in reality due to a process of self-digestion. It is claimed by Wells[7] that when the upbuilding function of a living cell is abolished by loss of its nutritive supply or impaired by the action of poisons the last function to be destroyed is the property of self-digestion. In Salkowski's experiments anabolism was necessarily abolished owing to the absence of cell nutrition, leaving the catalytic process to go on unhindered. It follows that if the higher vital process of anabolism is impaired or abolished by a poison the cell may attack and destroy itself by autolytic action. The toxins of pregnancy probably induce the liver changes in this way, through the abolition or impairment of the upbuilding function of the liver cells.

Granted that the blood during pregnancy is increasedly toxic, as claimed by Bouchard,[8] we must then assume an insufficiency of the liver function as an essential factor in the production of the morbid symptoms and lesions of the toxemia of pregnancy. The formula for its production would be insufficient liver and toxemia on the one hand, resulting in failure of the anabolic function and autolysis on the other. The substances in the blood, noxious to the liver cells, would first merely impair the hepatic function, thereby leading to accumulation of the toxins peculiar to pregnancy, as well as those arising from ordinary metabolism, which the liver in its crippled condition is no longer able to neutralize. When the toxemia becomes so severe as to be intolerable, abortion or premature labor is apt to occur through the effort of nature to relieve the condition by removal of the cause, or perhaps as a direct effect of the toxins. This generally occurs before the development of actual necrosis in the liver. The wide-spread destruction of liver cells, as indicated by clinical symptoms, does not ordinarily occur until after the lapse of a period varying from a few hours to a few days after the uterus is emptied. In other words, the removal of the primary cause of the toxemia by terminating the pregnancy, appears to have the effect of aggravating the condition, paradoxical as this may seem. This was true in four of my own cases, and is a feature of many of the reported cases of others. This peculiar behavior of toxemia cases is especially noticeable in those which begin as catarrhal jaundice during local epidemics of this disease. These cases do not appear to be at all serious until after delivery, when the symptoms of acute yellow atrophy supervene and lead rapidly to a fatal issue.

This tendency of toxemia cases to become worse after removal of the primary cause is a matter of supreme clinical importance, and it is surprising that it has not attracted more notice from obstetricians. So far as I can learn from the current literature on the subject, there seems to have been no attempt to ascertain its cause or to forestall its effect. Recognition of this peculiarity of these cases forces the conclusion that a new supply of toxins must enter the circulation after the uterus has been emptied. It seems to me that the source of these new toxins is not far to seek. The postpartum uterus loses weight rapidly after being emptied of its contents, the loss during the first week approximating 50 per cent., according to Williams'[9] figures, the freshly delivered uterus weighing about 1,000 grams and only 500 grams one week later. This rapid atrophic process undoubtedly results in large quantities of waste products being thrown into the circulation. The burden of neutralizing these products, which must be toxic inasmuch as they are excrementitious, falls on the liver, which in its crippled condition is unequal to the task. The impending necrosis of liver cells then becomes actually established.

Of interest in this connection is the fact that there is reason to believe that the process of involution of the uterus is itself essentially a physiologic autolysis of the organ, rather than a simple atrophy or fatty degeneration, as heretofore taught. This idea is borne out by the occurrence of peptonuria during the puerperium. Levene[10] refers to it in his article on autolysis, and something like the same idea must have been in the mind of Fischel,[11] before the advent of the doctrine of autolysis, when he advanced the theory that involution is due to the conversion of the hypertrophied uterine muscle into peptone, and its excretion in the urine. Peptonuria presupposes peptonemia, and, as is well known, peptones and albumoses are toxic when present in the blood. It is not to be inferred, however, that these are the only toxic substances resulting from the retrograde process in the uterus. I presume it will be understood that by the terms peptonuria and peptonemia the presence of albumose in the urine and blood is meant, instead of true peptone, which is never present in either fluid unless artificially introduced.

Granted that the toxins resulting from the retrograde change in the postpartum uterus are apt to be the determining influence in the actual development of an impending necrosis in the liver, the importance of forestalling their effect is obvious. This can only be done by terminating the pregnancy at an earlier date than would otherwise seem necessary. In other words, it is not enough merely to determine whether the liver can withstand the pregnancy toxemia, but allowance must also be made for the additional postpartum dose. An-

5. Edgar, J. Clifton: Clinical Manifestations of the Toxemia of Pregnancy, N. Y. Med. Jour., May 5-12, 1906.
6. Centralb. f. All. Path., xvi, 12.
7. Delayed Chloroform Poisoning and Allied Conditions, THE JOURNAL A. M. A., Feb. 3, 1906.
8. Autointoxication in Disease, translation by Oliver, 1894.
9. Obstetrics, 1903.
10. Autolysis, THE JOURNAL A. M. A., March 17-24, 1906.
11. Ueber puerperale Peptonurie, Archiv. f. Gyn., 1884, xxiv.

other element which is no doubt sometimes the determining factor in an unfavorable case is the anesthetic. While this applies especially to chloroform, it must not be forgotten that in order to produce complete anesthesia a toxic dose of an anesthetic is necessary, and, as heretofore stated, all the inhalation anesthetics are to some extent liver poisons.

PATHOLOGY.

The liver is the principal seat of the pathologic changes induced by the toxemia of pregnancy. The process consists essentially of a degeneration and necrosis of the cells of the liver lobules. Any of the three zones of the lobule described by Virchow may be affected by the necrotic process, but a careful analysis of published reports would indicate that it attacks by preference the central and mid-zonal areas. Schmorl[12] believes that necrosis beginning in the peripheral zone is typical of eclampsia, and his views are confirmed by Williams.[13] Both observers, however, attribute the necrotic process in eclampsia to secondary changes dependent on thrombosis of the vessels in the interlobular spaces. This explanation of the hepatic necrosis in eclampsia serves to support the view advanced by Williams that eclampsia is due to a different kind of toxemia from that giving rise to pernicious vomiting and acute yellow atrophy. According to this explanation the variety of toxemia which gives rise to eclampsia produces thrombosis primarily, the necrotic changes being a secondary effect, while the toxemia which results in pernicious vomiting and acute yellow atrophy is the direct cause of necrosis of the liver cells. Ewing[14] considers that eclampsia, acute yellow atrophy and pernicious vomiting are simply different manifestations of the same toxemia. While this question remains to be definitely settled, it is my belief that the diversity of the two types of toxemia will ultimately be established. In addition to the well-recognized differences in symptoms and pathology, between acute yellow atrophy and pernicious vomiting on the one hand and eclampsia on the other, there is a striking difference in their behavior after the uterus is emptied. Barring exceptional cases, the tendency of eclampsia is to get better a few hours after delivery, while that of the other variety is unmistakably in the opposite direction. Furthermore, they differ in prognosis, uncomplicated eclampsia being a much less fatal disease than acute yellow atrophy or pernicious vomiting. It is not unlikely that mixed types of toxemia may occur, giving a clinical picture that may be interpreted as eclampsia or acute yellow atrophy, according to the bias of the individual observer. The existence of these mixed types may be the cause of much of the unfortunate confusion in the terminology of this subject.

In addition to the lesions in the liver, degenerative changes are present in the kidneys and heart, and in eclampsia, small thromboses in the brain and lungs.

SYMPTOMS.

Vomiting is a prominent symptom of toxemia. When occurring in the early months this symptom dominates the picture to such an extent that the condition is classed as a clinical type under the name of pernicious vomiting of pregnancy. This early vomiting is apt to be confused with the benign type due to reflex or neurotic influences, but in the later months its significance is not so apt to be overlooked.

Headache is a common symptom, as are also neuralgic pains in other parts of the body. Epigastric pain, probably due to the liver changes, is especially significant. Increased secretion of saliva is an important symptom present in many of the bad cases. It is most noticeable at night during sleep. The patient on waking finds a spot on the pillow, due to the dribbling of saliva from the mouth.

Air hunger, described by Kussmaul[15] is a fairly constant symptom. It was a prominent feature in three of my four fatal cases and in four out of five cases seen with others.

Extreme mental depression is present in many cases. The patient takes a most gloomy view of her condition and frequently expresses a conviction that she will not recover.

Edema of the extremities or face is frequently noted, although it is by no means a constant feature. Albumin may or may not be present in the urine. Evidences of disturbed metabolism, however, may be rather constantly found.

All these symptoms precede the development of the necrotic process in the liver and are due to the toxemia itself. Those which depend on the destruction of liver cells are coma and stupor, black vomit, bile in the urine, possibly icterus, rapid breathing, convulsions (always in eclampsia, occasionally in acute yellow atrophy), failure of renal function, failure of circulation. Death is the rule after the advent of these grave symptoms, though regeneration of the damaged liver cells and recovery is possible.

DIAGNOSIS.

Valuable work has been done by Williams, Ewing and others toward establishing laboratory aids to the diagnosis of toxemia of pregnancy. Ewing first called attention to the diagnostic significance of unoxidized proteid derivatives in urine, while Williams was the first to point out the special significance of an increased percentage of ammonia. The normal amount of ammonia in the urine is from 3 to 5 per cent., and Williams considers it a danger signal when the percentage reaches 10 or more. I am in no position to express an opinion as to the practical clinical value of this test, having had no experience with it. There can be no doubt, however, that the test is based on logical grounds. It is well known by physiologists that when in an animal a part of the portal blood is diverted from the liver and carried directly into the general circulation by means of an Eck fistula between the portal vein and vena cava a considerable part of the urea nitrogen appears in the urine as ammonia.[16] Almost all the urea is represented by ammonia if the liver is entirely shunted out of the circulation by ligature of the hepatic artery and of the portal vein on the liver side of the fistula. In the light of this experimental data it is to be expected that hepatic insufficiency in the human subject would result in a similar disturbance of the ratio between the urea and ammonia output. While there can be no doubt that the presence of an increased percentage of ammonia in the urine is an indication of a dangerous hepatic insufficiency, it is denied by Ewing[17] that its absence is necessarily of favorable significance. It is to be regretted that the estimation of unoxidized proteid derivatives.

12. Untersuchungen über puerperal Eklampsie, Leipzig, 1893.
13. Pernicious Vomiting of Pregnancy, Trans. Am. Gyn. Soc., 1905.
14. Pathology and Pathogenesis of the Toxemia of Pregnancy, Amer. Jour. Obst., 1905, li, 2.
15. Quoted by Bevan and Favill.
16. Schafer, E. A.: Text-book of Physiology, 1898.
17. Personal communication, Nov. 19, 1906.

and especially the ammonia coefficient, is so complex a chemical procedure as to be available only to those who have access to the services of a skilled chemist. The diagnosis must, therefore, continue for the present to rest almost entirely on the clinical symptoms.

TREATMENT.

Palliative measures, to be effective, must be directed not only against the toxemia but quite as much against the hepatic insufficiency. No method of treatment hitherto employed has appeared to influence favorably the impaired antitoxic function of the liver. Eliminative and dietetic treatment, intended to reduce the toxemia, while sometimes successful, too often merely postpone the crisis, the morbid condition reappearing at a later date in aggravated form. I have seen several cases behave in this way, and many other examples may be found in the literature. In view, therefore, of the impracticability of treating the hepatic insufficiency, and the unreliability of treatment of the toxic condition itself, it seems to me that palliative measures should have no place in the management of a recognized case of toxemia of pregnancy.

Radicalism is, then, the only alternative, and in the interest of the patient it should be resorted to early and without reference to the interest of the fetus. Assuming that the diagnosis is established, the indication to empty the uterus is just as urgent as the indication to operate in a case of recognized ectopic pregnancy before rupture. If the condition arises during the early months the question as to whether to empty the uterus at one sitting or to induce abortion by a slower method must be decided according to the urgency of the case. On account of the possible unfavorable influence of anesthesia, nonoperative induction of abortion should be given preference, other things being equal. This rule should also be followed in the later months for the same reason. A protracted labor should not be permitted, however, as the excessive muscular exertion would add its quota to the toxemia already existing. If the case is very urgent, rapid delivery may be accomplished by means of whatever obstetric operation seems to be best suited to the case. Cesarean section may be performed by either the vaginal or abdominal method, provided that the exigencies of the case appear to call for such an operation. If, however, for any reason it is seen fit to perform the abdominal operation, the question arises as to whether it would not be advisable to remove the uterus at the same time in order to avoid a probable increase in the toxemia as a result of the process of involution.

In any operative procedure on a patient with toxemia inhalation anesthesia should not be employed if it is possible to avoid it, for reasons already stated. Spinal anesthesia, free as it is from the disadvantages of general anesthesia in this condition, is worthy of favorable consideration. In any event, chloroform should never be used in a case of toxemia of pregnancy.

REPORT OF CASES.

CASE 1.—Mrs. J. P. A., aged 19, primipara, was seen with Dr. Wyatt Heflin.

History.—Pregnancy was uneventful until the beginning of the eighth month, when she contracted what appeared to be an attack of catarrhal jaundice, a disease which was prevalent in the neighborhood at the time. The jaundice continued for two weeks, when labor came on, Jan. 14, 1903, about two weeks before full term. Spontaneous delivery occurred in four hours. The patient's condition was apparently normal except for jaundice, until forty-eight hours after delivery, when she gradually sank into a stupor and died January 17, about seventy-two hours after delivery. A few hours before death she vomited a quantity of coffee-ground material. A specimen of urine obtained just before death contain leucin crystals, and this finding, together with the clinical picture, led to a diagnosis of acute yellow atrophy of the liver. The case was reported as such before the Jefferson County Medical Society, Feb. 9, 1903. Postmortem was not allowed.

CASE 2.—Mrs. A. E. S., primipara.

History.—Pregnancy presented no abnormal feature except edema of extremities and face. The urine was examined repeatedly for albumin and casts, but always with negative results. Labor, about full term, began Sept. 9, 1904. After twenty-four hours' useless labor delivery was accomplished by version. Chloroform anesthesia was used and was somewhat prolonged on account of repairing an extensive perineal laceration. The patient's condition was good until the morning of September 13, sixty hours after delivery, when she was found by the nurse in a partial stupor. This steadily deepened, and jaundice appeared a few hours later and rapidly increased. Death occurred September 14, eighty-four hours after delivery. Postmortem was not allowed. Neither leucin nor tyrosin crystals could be found in the urine. A diagnosis of acute yellow atrophy of the liver based upon clinical symptoms alone.

CASE 3.—Mrs. C. H. C., primipara, aged 34.

History.—Nausea and vomiting, with albuminuria, appeared about the end of the third month. The condition improved remarkably on a milk diet and eliminatives. Under this treatment the woman's condition remained apparently normal until the end of the seventh month, when the symptoms returned rather suddenly. After a few days of palliative treatment labor was induced, and after a tedious labor delivery was accomplished by forceps under chloroform anesthesia. Black vomit appeared while she was still under the anesthetic, and consciousness never fully recovered. Urine was very scanty after delivery, and contained albumin, casts, and bile pigment. Death occurred thirty-six hours after delivery. No postmortem.

CASE 4.—Mrs. I. L. A., second labor.

History of Previous Pregnancy.—She was attended by me in her first labor, May 16, 1901. She had suffered very much from nausea and vomiting during that pregnancy. Delivery was accomplished by forceps. Twenty-four hours after delivery a mild, acute mania developed, which lasted about one week. Convalescence was slow, but finally resulted in complete recovery. She was advised by me not to attempt to go through another pregnancy, but after two years of fairly good health, she again became pregnant in August or September, 1903.

Subsequent Pregnancy.—In this pregnancy she almost lost her life from pernicious vomiting. She steadfastly refused to consent to the induction of abortion until she was in a desperate condition. Abortion was finally induced, however, and she made a slow but satisfactory recovery. She became pregnant again five months later, and got through the early months very well compared to the previous pregnancies. At the beginning of the sixth month, however, persistent vomiting set in, accompanied by scanty urine and albuminuria. She again refused to consent to having the pregnancy terminated until she began to suffer from "air hunger." She then consented to have labor induced, but her symptoms rapidly grew worse, and she had already sunk into partial coma before the preparations for delivery had been completed. The delivery was accomplished by version, the necessary dilatation of the cervix being obtained by means of the Bossi dilator. The entire proceedings were completed in thirty-five minutes, and without damage to the maternal structures. A very small quantity of chloroform was given, very little being required, owing to the partial stupor. Her pulse was almost imperceptible at the time of operation, and failed to respond to stimulation during and after the delivery. Death occurred four hours after delivery. Postmortem was not allowed.

CASE 5.—Mrs. W. G. O., third pregnancy.

History.—The patient suffered from headache, mental depression, edema of face and extremities, insomnia, increasing albuminuria, scanty urine and profuse salivation. No improve-

ment occurred under palliative treatment. Labor was induced at the seventh month of pregnancy, and a living child was delivered. Recovery was uneventful.

CASE 6.—Mrs. J. D. H., was seen with Dr. R. B. Harkness; third pregnancy.

History.—Eclamptic convulsion had occurred after the first labor. The second pregnancy and labor were uneventful. One convulsion occurred at the fourth month of the third pregnancy. Improvement took place under palliative treatment. The woman had an easy labor at full term. Rapid pulse and labored breathing with partial stupor developed a few hours after labor. The condition was exceedingly grave. Convalescence was slow and complicated by endocarditis and thrombosis of the veins of the left arm.

CASE 7.—Mrs. W. H. T. was seen with Dr. D. F. Talley.

History.—The principal symptoms were "air hunger" and vomiting of coffee-ground material. Pulse was rapid and weak. Premature labor was induced by Dr. Talley and recovery was uneventful.

CASE 8.—Mrs. J. O. T. was seen with Dr. D. F. Talley.

History.—This patient suffered from persistent vomiting of coffee-ground material, which gave the blood reaction with the guaiac test. There were also present mental torpor and profuse salivation. Premature labor was induced by Dr. Talley and recovery was uneventful.

CASE 9.—Mrs. B. was seen with Dr. E. S. Casey.

History.—Spontaneous abortion occurred Sept. 27, 1906, in the third month of pregnancy. The uterus was curetted on account of retained secundines, Oct. 4, 1906, under ether anesthesia. Temperature remained high, and on the day following the curettage, coma and jaundice appeared. The jaundice deepened rapidly, coma became profound and death occurred Oct. 6, 1906, eight days after the abortion. Postmortem was not permitted.

INFLUENCE OF THE MOTHER'S HEALTH IN PREGNANCY ON HER UNBORN CHILD.*

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EDINBURGH.

There are three epochs of a child's life during which the mother's influence is supreme: The middle period of the three is that of lactation, and it is followed by a time of varying extent, lasting usually till the child goes to school, while it is preceded by an antenatal epoch of at least nine months' duration. It is with the last named of the series only that I am here concerned; but it may make for lucidity if I indicate briefly the kind of influence which a mother exerts during the other two periods, both of which are distinguished from the third by the fact that they are postnatal. I will call the three epochs in their order: 1, Antenatal; 2, lactational, and, 3, postlactational.

The *postlactational period* of influence extends from the time of weaning, which may, perhaps, be stated roughly as occurring at the ninth month of the child's life, to the year when the child goes to school or in some other way passes from under the immediate supervision and control of the mother. During these years, which may be estimated at five or six, the mother's influence over her child is preëminent; it is not, however, exclusive of all others, for the father, or the nurse, or brothers and sisters, may all have a certain degree of control over the health destiny of the young child growing up among them. Nevertheless, the maternal influence far outweighs that of all the rest combined; and it may be stated generally that the mother determines what shall be the food of her child, what shall be his clothing, what the amount and kind of exercise shall be, what shall be the physical surroundings, and, vastly more subtle, what the moral and religious atmosphere. If she be a wise mother she will endeavor to supply him with food suited to his age and requirements; she will see to it that he is clothed in accordance with the needs of exercise, indoors or outdoors, and with the varying conditions of climate and season; and she will take care that his body hygiene, as well as that of his nursery and playroom, be the best that can be obtained. In all these matters she will ask for, and ought to receive, the best advice from her medical attendant; and, if she employ a trained nurse to look after her child's interests during a part of the day or night, she ought to choose one capable of understanding the reasons for the rules of health in childhood. She will endeavor also to shield her child from epidemic and exanthematous dangers, and from the more persistent and pernicious effects of bad habits acquired in early life. It is no exaggeration to say that, for the proper performance of a mother's functions, as they are mapped out above, a very large part of a mother's time must be set aside. That all women who have borne children are not willing to devote so much time to the business of influencing their offspring's future is a commonplace; but such women can hardly lay claim to the name of mother, for a mother's duties do not cease with the close of the third stage of labor.

In the *lactational period,* the first nine months of postnatal life, the infant's welfare is even more dependent on the mother's care and interest. Her influence is now more than preëminent; it is practically exclusive. The child is drawing his entire nourishment from the maternal tissues; he is watched over by his mother day and night; nothing, it may be said, can happen to him without her knowledge and consent. Her dietetic errors are reflected in his arrested nutrition; her emotional disturbances and social distractions are transmuted into his digestive disorders, and the diseases from which she may suffer may either be passed on to him or in less direct ways, by altering the composition of her milk, may affect the performance of his bodily functions. Should she become pregnant while nursing, both the infant at the breast and the fetus in the uterus will feel the strain that is thus put on her organism. I need not linger over this period of maternal influence, for I think every one admits that the state of an infant is a very fair test of the structural and functional integrity of his nursing mother. Neither, unfortunately, is there any need to inform the medical practitioner that mothers, some of them perhaps from inability, others more likely from disinclination, too often are not found standing in this close relationship to their young infants. There may be dangers to the infant from drawing his supply of milk from her breast, but the dangers are multiplied when he has to depend on the cow or the manufacturer of artificial food, although I freely admit that the cow has often proved a benefactor and that the manufacturer has sometimes shown ability and ingenuity.

THE ANTENATAL PERIOD.

But it is more with the influence of the mother on her child in the antenatal period of his existence that I have to do here. The extent and character of this influence are to a large degree unknown to or unconsidered by many medical men. Too often physicians allow notions of the

* This paper was prepared to be read in the Section on Diseases of Children, at the Fifty-seventh Annual Session held at Boston, June, 1906.

potency or impotency of maternal mental and emotional impressions to prejudice their whole conception of the prenatal relationship existing between mother and fetus. While I do not affirm that a mother's mental and emotional state during pregnancy has no influence on her unborn child (indeed, I believe there is such an influence), yet I deplore the fact that scientific men have been led away from the plain facts and ascertainable phenomena of the transplacental transmission of maladies, predispositions and immunities to the consideration of such a will-o'-the-wisp as the effect of the mother's imagination.

While, no doubt, mental depression and emotional disturbances take their place among other etiologic factors and have an effect on the mother's general health, and so on that of the fetus, just as on that of the suckling, yet the influence of such states is probably slight compared to that of, say, toxins in the mother's blood and diseases of the placenta. But that a maternal mental picture, pleasant or unpleasant, can impress itself on the body of the fetus as a photographic negative is reproduced on a print is, in my opinion, entirely without scientific basis. Such a belief has been the cause, direct and indirect, of a great deal of misdirection of inquiry, and the nature of the results obtained has been such as to bring to the whole subject a certain measure of disrepute.

The subject I shall endeavor to discuss is, then, how the state of the mother's health in pregnancy influences that of the child to whom she is to give birth, and, with what I have said above, I shall dismi s the ancient but discredited theory of maternal impressions and pass to views which can commend themselves to the scientific mind.

THE RELATIONSHIP OF FETUS TO MOTHER.

First, it is necessary that a clear conception exist as to the relationship of the offspring to the mother before birth. I do not intend to consider the manner in which the ovum in the Graafian follicle is influenced by the maternal metabolism, nor do I intend to deal with heredity at all; I shall limit the discussion entirely to the influence of the maternal on the embryonic and fetal organism, during the nine months of pregnancy, which is a completely different matter from heredity, as heredity is generally understood. It is true that heredity and the influence of the mother on her offspring in pregnancy are constantly being confused and even regarded as one and the same thing; but they are distinctly different, unless, indeed, we are prepared to call the influence a woman has on her child at the breast, through her milk, a hereditary one, and this assumption, I think, few will allow. I exclude heredity, therefore, not because I do not admit its action, although I believe we know extraordinarily little about it, but because I wish to focus attention on the much less hypothetical effect produced by the state of the mother's health on that of her infant *in utero*.

THE PHYSIOLOGIC RELATIONSHIP.

In the early weeks of pregnancy the impregnated ovum, embedded in a mass of cells which may be conveniently termed the trophoblast, is attached to the wall of the uterine interior; processes from the trophoblast push their way into the uterine blood sinuses in the mucous membrane at the site of attachment, and embryonic blood vessels invade the processes and so come to lie bathed in the maternal blood with only a layer or two of trophoblast cells intervening. As the weeks pass by, specialization takes place and there is formed a definite placenta in which villi, with contained fetal vessels, lie in pools of maternal blood; but the essential character of the relationship remains the same. The fetal and maternal bloods do not mix, unless, indeed, a hemorrhage into the placenta takes place, but they are sufficiently near each other, and the intervening tissues are sufficiently porous, to permit the passage of fluids, gases, and even of solids from the one blood to the other. This is what I mean when I speak of the transplacental interchanges. The laws of these exchanges are not yet fully known, but enough has been ascertained to lead us to believe that there is a constant flow from the maternal into the fetal blood of oxygen, water, chemical substances (such as lime, iron, potash, and soda) in solution, proteids, fats, and even of white blood corpuscles. From the fetal into the maternal blood there is a reverse current consisting mainly of effete materials to be ultimately got rid of by the mother's excretory organs. It also is known that under exceptional circumstances other things pass over from the one organism to the other, among which may be mentioned poisons, toxins, microbes, and agglutinins. Why in one case these exceptional substances pass over and in another case do not we are not in a position to state. The easiest explanation of their passage, as the occurrence of a hemorrhage or of disease in the placenta breaking down the tissues intervening between the two bloods apparently does not apply to all cases, although it may be accepted for some. We must, no doubt, look on the peculiar states of the fluids on the two sides of the placental barriers as the cause; and the discovery by physiologists of the regulating factors in the transmission of fluids through animal membranes in other parts of the body, will very likely aid us before long in the solution of this antenatal problem; unless, indeed, the solution of the antenatal problem antedates that of the postnatal one.

It is an interesting question whether or not there is any other route by which materials may pass from the mother to the fetus or in the reverse current from the fetus to the mother. I think there is some evidence to show that in some instances, at least, there may be a circulation of the liquid amnii and that in this way substances may so pass, thus escaping the placental barriers. In other words, it seems likely that some chemical substances in solution may transude into the amniotic fluid from the maternal tissues of the uterine wall and be swallowed by the fetus and so reach the fetal tissues.

COMMUNICATION BETWEEN MOTHER AND FETUS.

I am now in a position to refer to the influences which by one or the other or by both of these routes may pass from the maternal to the fetal organism. The most familiar instances are those in which the mother has an infectious disease, such as smallpox or measles, and gives birth to an infant with obvious signs of the disease in question on it. There are two possibilities in such an occurrence. Either the cause of the maternal disease has passed through the placental or amniotic barriers and affected the fetus also, or else the infecting substance, whatever be its nature, has affected both the maternal and fetal organisms at the same time. In other words, it is not certain whether the mother is first infected and then infects the fetus, or whether the latter is simultaneously infected with her. It may be said that the incubation period in the case of the fetus will show which is the correct view; but there is a difficulty, for the data

are difficult of ascertainment and there is always a probability that the incubation period may be shortened in the case of two organisms so intimately in contact with each other as those of mother and fetus.

Other instances are those in which a disease, caused by a special microbe, is transmitted from mother to fetus, as is proved by the discovery of the microbe in the placenta and in the tissues of the fetus if it should be born dead. Such maladies are fetal sepsis and fetal tuberculosis. It is true that the latter is extremely rare, but it is also true that a few absolutely proven cases have been recorded. Further, when the tubercle bacillus surmounts the placental barriers, there is abundant evidence that it finds in the fetal tissues a suitable culture medium, for in the authenticated instances of fetal tuberculosis the disease has been of that virulent type which is usually seen only in birds (avian tuberculosis). We are forced, then, to conclude that the placenta plays a strongly protective rôle in connection with the unborn infant of a tuberculous mother. Perhaps other microbes attack the placenta itself, rather than other tissues, and so more readily overcome its opposition while the tubercle bacillus is held in check by some chemical substance in the placenta or by an essential weakness in itself. The vitality of the placenta is probably very high, on account of the large amount of epithelial tissue it contains, and so perhaps its resistance to bacilli is great. If this be so, it will account for the ready passage of microbes which thrive in strong tissues and for the difficulty of passage of such as breed best on devitalized structures.

Again, there is another group of diseases which are not transmitted to the fetus in the same form as that which they exhibit in the mother. Typhoid fever, for instance, is known to have an effect on the fetus, for the germs of it have been found in the fetal tissues in cases in which the mother has suffered the disease and given birth to a dead infant. But, probably on account of the inactive state of the fetal intestine, or by reason of the umbilical mode of entrance of the germs into the fetal body, the malady takes the form of a general blood poisoning rather than that which is associated with typhoid in the adult. Here, then, it may be that the mother's disease causes morbid changes in the unborn infant which are not those occurring in the maternal organs, but which are due to the same microbe. Possibly, also, diseases not yet shown to be due to a microbe, such as eclampsia, influence the fetus in this obscure manner; perhaps toxins pass the placental barriers and disturb the nutrition of the fetus. It may be difficult to find a name for these diseased states, they are semi-diseases, but I think that their existence is undoubted, and I have given a chapter to their consideration in my recent work, "Manual of Antenatal Pathology."[1] The occurrence of morbid states in the fetus due to the passage of toxins from the mother, due in their turn to diseases of the mother, leads me to refer to fetal maladies caused by the invasion of the body of the unborn infant with toxic materials, such as lead, alcohol and mercury. There is every reason to believe that the placenta acts as a barrier to the passage of these substances also; but it occasionally fails, either by reason of the great amount of the poison or on account of the presence of disease in the placenta. The placenta also seems to save the fetus by storing up the poison in itself, as does the liver in the adult; and this fact, I think, explains how it is that the usual result, when the placental safeguard is broken down, is the expulsion of a dead fetus and not a diseased one. The poison has spent its force on the placenta, and by destroying it has killed the fetus; there has been no time for the poison to produce its specific effects on the fetus.

It must never be forgotten in dealing with fetal pathology that the placenta is one of the fetal organs, and a very vital one, and that when it is attacked and injured the results to the unborn infant are very serious, much more immediately serious than if, for instance, the fetal lungs, stomach, brain or kidneys were grossly degenerated. This is probably one of the chief reasons why maternal syphilis has so terribly disastrous an effect on antenatal life, for it causes such marked lesions in the placenta.

I have here attempted the merest sketch of the influence which maternal maladies, alcoholism, drug habits and the like may have on the unborn infant; and I have not touched at all on the effects which these same morbid agents may have on the organism in the embryonic stage of its antenatal existence. I believe the latter changes to be teratologic, not pathologic; but into that very large question I do not propose to enter.

SUMMARY.

1. All diseased conditions of the mother in pregnancy, whether due to microbes, toxins, toxic agencies or diatheses, are, I believe, dangers to the fetus.

2. The fact that the fetus sometimes, perhaps often, escapes must be largely ascribed to the protective influence of the placenta.

3. The morbid influence may either force its way through the placental barrier and so reach the fetus and cause disease, etc., in it or, by destroying the integrity of the placenta itself, it may cause death of the fetus.

4. The laws that regulate the placental interchanges, normal as well as pathologic, have not yet been discovered.

5. The great safeguard of the fetus, if the mother be diseased, is a healthy placenta which opposes the passage of germs and toxins and which is not itself liable to the attacks of these morbific agencies.

6. We do not yet know if there are any medicines which act, as it were, as placental tonics; perhaps potassium chlorate and mercury are of this nature and possibly some of the organic extracts may be found to have this action.

1. Illustrative instances of the statements made in this article will be found in abundance in this work, especially in Chapters XI to XVI.

SURGICAL ANESTHESIA,

WITH SPECIAL REFERENCE TO POSTANESTHETIC NAUSEA AND VOMITING.

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Much has been said and written on the important subject of anesthesia. Still there has been one particular point that has as yet never been satisfactorily settled, so far as I am able to learn. I refer to the distressing nausea and vomiting that so often follows the administration of ether and chloroform.

After having exhausted such methods as lavage, filling the stomach with water prior to the operation, pungent odors to nostrils, hypodermic medication, etc., without any apparent beneficial result, I began experimenting with a measure at once simple in use, logical, harmless and, to my mind, expedient.

We know that vomiting may be caused by a drug irritating the vomiting center directly, by being conveyed to it by the circulation or irritating it reflexly from the stomach when conveyed there by the circulation. Also that substances may be ingested which are irritating to the mucous membrane of the stomach and cause vomiting (reflexly) independently of the circulation, but not independently of the vomiting center.

It is my opinion that postanesthetic nausea and vomiting are due to the irritation of the vomiting center in the medulla by either the unchanged ether, or the alcohol radical when oxidation is incomplete, which still remains in the circulation in concentrated form after the reflexes return.

Ether and chloroform act on the brain as an alcohol. The motor and sensory areas are paralyzed by an anesthetic dose. The products of oxidation of ether or alcohol are carbon dioxid and water. As neither of these substances cause nausea or vomiting when introduced in the organism, it is my aim to oxidize the ether as soon as the anesthetic effects are no longer required by the surgeon.

This is accomplished by oxygen inhalations, begun immediately on suspension of the anesthetic and continued until consciousness is regained, and in some cases even longer.[1] The changes which take place when we are dealing with ether might be stated thus:

$$C_4H_{10}O + 6O = C_2H_6O + 2CO_2 + 2H_2O.$$
$$(C_2H_6O + 6O = 2CO_2 + 3H_2O.) \text{ or,}$$
$$C_4H_{10}O + 12O = 4CO_2 + 5H_2O.$$

It will be seen that the irritating drugs are reduced to harmless products, and this before the reflexes are fully restored if we are to accomplish the desired end.

In the event of chloroform being used, I am not prepared to state what the result of oxidation is. Probably formic acid, carbon dioxid, water and chlorin, the latter immediately combining to form dilute HCl and other compounds

$$(4CHCl_3 + 7O = CH_2O_2 + 2CO_2 + H_2O + 4Cl_3).$$

In giving oxygen inhalations, I am in the habit of using the 40-gallon jar, which weighs only 10 pounds and is, therefore, easily handled. The apparatus which comes with it is so arranged as to first allow the oxygen to escape into an elastic bag, from which it passes to a ten- or twelve-ounce wash bottle containing water to about one-third of its capacity. It is then conveyed by suitable rubber tubing, having a glass tip, to the nostril. The anesthetizer holds the tip in place and regulates the amount of oxygen so that a slight pressure is maintained at all times.

The conditions under which I have so far used the method are as follows:

Preparation of Patient.—The preparation of all patients begins not later than the day preceding the operation and is carried out diligently by the nurses without variation. The same routine prevails as in the hospitals of the East and elsewhere. Suffice it to say the alimentary canal is practically empty when the patient enters the operating room.

Choice of Anesthetic.—Ether, exception, infants.

Administration.—The open method as carried out at the Mayo and Ochsner clinics. I take it that few are unacquainted with this method and, therefore, do not dwell on it except to express the belief that it is far superior to any method now or heretofore in use.

Surgical Procedures Attempted.—These have ranged through operations on the neck, face, brain, stomach, intestines, appendix, gall bladder, liver, kidneys, rectum, cystic bladder, prostate, urethra, tubes, ovaries, uterus, vagina, amputations and plastic work.

Time Consumed.—This has varied from fifteen minutes to two hours.

Thus it will be seen that the conditions vary little from those found in most hospitals. The choice of the anesthetic and method of giving it may differ, but, inasmuch as I have used the other methods and varied my anesthetic in the past with the same result, I see no reason why postanesthetic nausea and vomiting can not be done away with in a very large majority of instances.

In the past two years that I have been using this method at the Ozark Sanatorium as a routine practice I have not had one patient that has been disturbed by nausea or vomiting where the conditions have been properly met, and in some of the patients nausea and vomiting of a reflex character have been incessant prior to going on the table.[2] It is presumed that the surgical procedure removed the cause, but it is also presumed that such a patient would more often have vomiting following an anesthetic than one whose stomach was previously quiescent, yet such patients have not even had nausea.

Whenever there have been two patients bearing the same characteristics of temperament and having the same surgical lesion, to one I have administered oxygen and to the other nothing except air, after the anesthetic, and invariably has the one receiving the oxygen had no disturbance, while the one receiving only air has had both nausea and vomiting on regaining consciousness. Just so did vomiting occur in those patients who did not receive the oxygen until some time after the anesthetic had been withdrawn.

It may be that the method of arriving at this conclusion is faulty, but I do not think the conclusion itself, that oxygen eliminates post anesthetic nausea and vomiting, is.

Inasmuch as the method is at once simple to operator and patient alike, having practically no disagreeable features, and harmless to the last degree, I can fearlessly recommend it to any and all, and sincerely trust that some observer with unlimited clinical material for investigation will take up the subject and give it a convincing test.

1. The anesthetic is often discontinued before the subcutaneous sutures are in place and always before the dressings are adjusted.

2. If any great amount of saliva and mucus has been swallowed, it will often be expelled, at one effort, as soon as the patient begins to wake up. No nausea accompanies or vomiting follows.

THE FUNCTION OF THE PREFRONTAL LOBES.

APROPOS OF THE PATHOLOGIC FINDINGS IN A CASE.*

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PHILADELPHIA.

Comparative anatomy teaches that the frontal lobes of ascending types of animals are found gradually increasing in size. In anthropoid apes, the brain, which is very similar to that of man, is distinguished from the latter by the development of the frontal convolutions; they are all short and the inferior one, particularly so. In the studies by morphologists and neurologists, considerable attention is given to the question of the localization of psychic functions. Researches in comparative and experimental physiology, clinical ob-

* Presented before the Philadelphia Pathological Society, Nov. 22, 1906.

servations, histologic studies, all lead to this view that a coöperation of all constituent portions of the brain is necessary for a normal function of intellect and that only a diffuse alteration of the brain is able to produce a modification in intelligence. Nevertheless, the anterior portion, the so-called prefrontal lobe, has been recognized since Gall, as the preponderantly better developed in highly intellectual individuals and that mental deficiency goes hand in hand with abnormal frontal lobes. According to Meynert, the weight of parietal and occipital lobes together, is to the frontal lobe as 3 to 6.

Pathologic studies of the brain have thrown considerable light on the question of localization of higher psychic function. Sifting all the accumulated data, especially those concerning cerebral tumors, the conclusion can be drawn that while a lesion of any portion of the brain is capable of giving place to mental disturbances, yet on the other hand most pronounced lesions are sometimes unaccompanied by disturbed psychic functions; nevertheless it is generally admitted by the majority of observers, that a tumor or any lesion of the prefrontal region, particularly of the left (Phelps) is more frequently attended by mental disturbances than a lesion of any other portion, except, perhaps, of the corpus callosum. Attempts have been made to determine whether or not, among all possible *normal* mental

Apparently recent hemorrhagic area in the white substance of the left prefontal lobe.

phenomena, there are some that are especially characteristic of the function of the prefrontal area; also whether in pathologic conditions of the same region *special abnormal* mental phenomena are present.

Among all possible lesions of the prefrontal lobe, tumors are the best studied and indeed the majority of observations concern those of prefrontal neoplasms. Léonora Welt[1] made a careful study of eight cases of various lesions of the prefrontal lobe and noticed the following mental symptoms: The patient is morose, taciturn, suspicious, and at times violent. L. Steven[2] concludes from his studies that patients thus affected are very facile in temperament, unable to concentrate their attention and present loss of memory for recent events. Bianchi, who made exhaustive studies of the subject, points out the following mental symptoms: Restlessness, indifference, great irritability, want of criticism, automatism. Flechsig, who places in the frontal lobe one of his association centers, finds in diseases of this area a loss of sense of relation of personal consciousness to outside influences, inability to discriminate possibilities from impossibilities and, finally, loss of self-control.

1. Thèse de Paris, 1888.
2. Glasgow Med. Jour., lxv, 1906.

Summing up the opinions of all observers, the following are the principal symptoms: Mental hebetude, automatism, excitement and irritability, or else depression, disorientation and loss of power to concentrate attention. The German writers long ago called attention to a special symptom, which they found in a large number of cases in diseases of the prefrontal lobe. Jastrowitch gave it the name *Moria;* Oppenheim calls it *Witzelsucht.* The characteristic feature of this symptom is the humoristic spirit which is seen in the patient's actions and words. Although it is not present in every case, and this symptom was observed in tumors of other areas of the brain, it is nevertheless admitted by many writers[3] to be present more frequently in affections of the prefrontal lobe than of any other region of the cerebrum.

The patient, whose history, I am about to relate, presented during life in addition to excitability, disorientation, motor restlessness, indifference to surroundings, inability to concentrate attention, all symptoms to some extent characteristic of prefrontal lesions (see above)—a state which can be called "euphoria." This term is a more general expression of the happy, contented state of mind. It is certainly allied to *Moria* and *Witzelsucht,* but it is broader in its conception. The case is highly interesting because of the appearance of mental phenomena shortly before death and at autopsy a recent hemorrhage was found in the left prefrontal lobe.

History.—J. M. R., aged 34, upholsterer, had a hemiplegic attack at the age of 25. He improved rapidly, so that at the end of six weeks he returned to work and remained at his place of business until about five days before death. The hemiplegia persisted to a mild degree, but his speech was somewhat impaired. The mental faculties were intact, as he was able to carry on his business; his transactions with his customers and his relations to his family being perfectly normal. About five days before death, while seated at the table, he suddenly became unconscious. A few minutes later, when his consciousness returned, he showed marked confusion. On the following day he became restless and violent. He would strike any one who approached him.

Examination.—When I saw him he presented no new localized symptoms in addition to the old mild hemiplegia on the left. The mental phenomena were very interesting. He was indifferent to surroundings. It was almost impossible to hold his attention for longer than one minute. Questioned about events or objects familiar to him, he would give one or two answers, but would immediately take up another subject. He was very restless, threw off the bedclothes; then sat up, lay down, and so one. He ignored the presence of females, as he frequently uncovered himself. Asked where he was, he replied, "in Paradise." The most striking symptom was the constant passing of his hands over his face and putting his hair and moustache in order. He insisted on having a mirror on his table, would incessantly look in the mirror, and express pleasure at seeing himself in good shape. He often repeated the word "pretty" or "handsome." When any one would enter the room he would sit up suddenly, grasp the stranger's hand, pull him and twist his fingers, repeating continuously the words "glad to be with you." Every act and word expressed enchantment. Whoever appeared at the door, he claimed to know well and asked to remain. At times he would attempt to joke with the stranger, saying he sent him flowers or a check the day before, and then would laugh aloud. Then again he would forget it and return to his mirror and to putting himself in good shape, totally ignoring every one around him. This was evidently done in an automatic manner. Any article of food tasted delicious; he expressed pleasure at anything offered him. He was unable to sleep. The condition lasted four days, when

3. Schuster: Psych. Störung. bei Hirntumor., and Gianelli: II Policlin., 1897.

the patient gradually became comatose and expired at the end of the sixth day.

Autopsy.—At autopsy I found, besides an old softening in the right internal capsule, a recent hemorrhage area in the white substance of the left prefrontal lobe (see illustration). Microscopic examination of the brain and the spinal cord shows the descending degeneration traced from the right internal capsule. It may be of some interest to know that the patient had a tendency to bleed easily and profusely on the slightest occasion. This factor probably was the immediate cause of the cerebral hemorrhage.

The present case is interesting therefore, because of the causal relations of a lesion in the left prefrontal region to the mental phenomena and because of the special character of the latter, similar to those observed by other authors. The euphoria of the patient was striking; he expressed a psychic childishness in his acts and words. Since an analogous symptom was observed by others, viz., *Witzelsucht, Moria,* and since in my case it was the most conspicuous phenomenon throughout the man's brief illness, perhaps it could be considered to some extent as pathognomonic of diseases of the frontal lobe. This contribution to the study of pathology of the prefrontal lobe adds a new, although not absolute, proof of the localization of the higher psychic functions in this region of the brain.

ACUTE OVERSTRAINING OF THE HEART.*

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It is now about thirty years since Peacock, as a result of observations made by him on Cornwall miners, acquainted us with a special form of heart disease, the etiology of which he tried to connect with previous muscular straining.

His observations were confirmed later on by the investigations of Myers, Clifford Albutt, Da Costa, Joh. Seitz, Munzinger, etc. Nevertheless, there were other authors that did not admit of a condition of excessive heart-straining, or at least were very doubtful about it, as, for instance, v. Schroetter, E. Seitz and Strümpell. It was the investigation of Leyden and Fraentzel which again gave new impulse in this domain, and in one of my publications I was enabled to mention these observations of cases which correspond with those of both last-named authors.

We naturally have to distinguish between a chronic and an acute overstraining of the heart, and it is hardly necessary to mention that the first can result only from an accumulation of repeated single overstrainings; the investigation of the latter is, therefore, of extraordinary interest. Many former doubts have been dispelled by a series of observations (Leyden, Fraentzel and myself), as well as by a better knowledge of the physiology of the heart. Nowadays we possess a better knowledge of the innervation of the heart and are also better acquainted with the functions of the pneumogastric and sympathetic and of the extra- and intracardiac nervous centers —I refer, among others, to the coordination center of Kronecker-Schmey, etc. All this may help to clear many misunderstandings which may be of consequence in the different manifestations of heart-overstraining. The numerous investigations on the intracardiac as well as on the intravascular pressure command attention, also the exact determination of the time-limits of the rhythmic cardiac movements, and above all the reflex actions which may influence the activity of the heart from the lungs, the blood vessels, the abdominal viscera and other organs. Such investigations have become so numerous and so many well-known names are connected with them that it is impossible to mention them in detail and superfluous to report on the conclusions which have already become the common property of medical science.

Let us now consider the question whether or not an acute overstraining of the heart ever actually occurs. According to Leyden, Fraentzel and myself, we must admit of such a possibility. Still, in spite of all the histories of cases published so far, the objection was raised that the heart itself had already undergone some previous change either in structure or in function and that the subsequent straining was only a determining cause for further aggravation. Although former investigations, as well as a number of old and recent cases, left me hardly a doubt that a pure acute overstraining of the heart actually does occur, I considered it advisable to investigate this important question more closely. For through the solution of this problem we obtain definite conclusions regarding not only acute and chronic overstraining of the heart but also many other obscure points concerning the pathology of chronic heart diseases. On these grounds I have instituted a number of experimental investigations.

When we look at the literature we find, apart from the psychical influences which later on we shall also consider more closely, that all those causes which lead to an injury of the heart through bodily overstraining were referable to muscular actions of different kinds, such as the lifting or carrying of heavy burdens, dancing, straining marches, etc. These always had in common the one fact that a dyspnea of longer or shorter duration had invariably been called forth by the most varied muscular movements.

In order to study the influence on the heart of such muscular actions as lead to dyspnea I selected wrestling, which I had performed by healthy, strong men in such a manner that they alternately inhibited their movements by forcibly resisting each other or by each lifting his antagonist. I might also remark that for my experiments only such persons were selected whose clinical histories as well as local examinations showed them to be possessed of absolutely normal organs.

Before the wrestling began the heart limits and the point of the apex-beat were correctly outlined, sphygmographic curves and blood pressure registered, the position of the diaphragm and the posterior pulmonary limits located, the frequency of the respiration and of the pulse, the quality of the pulse-waves and of the heart sounds accurately determined. As long as no dyspnea appeared only an increase in the frequency of respiration and pulse were noticeable; everything else remained as before. But even a very few minutes after actual dyspnea had manifested itself the picture was changed. The heart limits were removed outward for 1 cm. or more; the apex-beat was shifted visibly and perceptibly toward the axilla; the respiration was often more than doubled, the pulse pressure, which at first was increased was ultimately reduced to the amount of 10, 20 and more mm. Hg. according to the increasing severity of the dyspnea. Both tables A and B illustrate this as well as other observations made during the wrestling.

As shown (Figs. 1 to 8), the increased cardiac pres-

* Read before Johns Hopkins Medical Society in Baltimore; Jefferson Medical College in Philadelphia; Medical College of Ohio and Medical Department of the University of Cincinnati.

sure manifests itself by arrhythmia, and we even notice a pause (Fig. 2), once after three, again after four pulsations; this has also been mentioned by Knoll in his investigations on the alterations of the heart-beats. In the experiments of which I speak the retardation could naturally not take place on account of the strong dyspnea, and it was obviously impossible to obtain curve-tracings of the pulse during the act of wrestling itself.

The relaxation of the vascular wall is very evident (Figs. 3, 4, 5 and 6), as this manifests itself by a greater ascension and stronger dicrotism (Sommerbrodt). Whether we have to deal here simply with an effect of a reflex action dependent on the magnitude of the intrabronchial pressure with conditions of irritation due to deficiency of oxygen or of accumulation of carbondioxid or with still other reflex relations, has not yet been determined.

We certainly possess in the vascular system itself a powerful factor which is able to interfere compensatorily; but this is possible only to a certain extent, beyond which it is no longer able to establish an equilibrium. Thus I have often seen that the strongly dilated heart is not longer able to send a sufficient quantity of blood into the arterial system even with accelerated and deeper respiration, the pulse becomes small (Fig. 8), even occasionally thready, the blood pressure falls excessively (as is also evident in the pulse-tracings), or the increased intracardiac pressure which is still present after a longer period of rest continues to manifest itself by arhythmia.

I should like to call special attention to the change in size which the heart undergoes, since this appears to me to be of great importance. I mean the dilatation of the heart which takes place to the right as well as to the left and which you may be able to recognize by the diagrams[1] (Figs. 14-19).

The following may be mentioned for clearer information: The heart limits in H. B. (which correspond also to Table A and the tracings in Figs. 1-6) were determined by a renowned colleague[2] well versed in the art of physical diagnosis by the ordinary percussion

TABLE A.**

H. B., masseur, aged 20; 196.5 cm. tall; muscles powerfully developed; little adipose tissue; all examinations show normal conditions.

Conditions.	Time. Hr.	Time. Min.	Kind of Motion.	Position of Diaphragm.	Respiration.	Pulse.	Quality of Pulse.	Heart Sounds.	Blood Pressure by Basch's Sphygmomanometer.	Apex Beat Seen.	Remarks.
Before wrestling.	4	33	.....	Upper margin of sixth rib.	16	84	Full, soft, not easily compressible.	All clear.	115 mm. Hg..	0.5 cm. int. to nipple.	
	4	45	After three rounds of severe wrestling.	.....	.....	150–160	Irregular.	Clear, irregular.	130 mm. Hg..	0.5 cm. ext. to nipple.	Dr. L. and I both note dilatation of 2 cm. of right ventricle
After simple wrestling.	4	55	Continued wrestling.	.....	.....	168	Here and there some irregularity	Clear, irregular.	105 mm. Hg..		
	4	56	Renewed wrestling.	.....	.....	156	Here and there some irregularity	Clear, irregular.	100 mm. Hg..		
	5	8	Before wrestling.	Lower margin of fourth rib.	21–22	108	.....	.....	.....	.....	Positi'n of diaphragm shifted upward 2 cm.
	5	20	.....	.....	40–42	140–150	Full, regular.....	Clear....	.....	5.5 cm. ext. to mammillary line is perceptible in fourth intercostal space.	Feeling of palpitation and shortness of breath duri'g wrestling; no painful sensations anywhere.
Wrestling with belt tightened around the abdomen.	5	21	1 min. pause.	.....	40	140	Full, regular.....	Clear....	.....		
	5	22	1 min. wrestling.	Lower margin of fourth rib.	.....	144	Irregular.....	.....	.....		
	5	24	After 20 min. pause.	Upper margin of sixth rib.	18–20	96–100	Still irregular, full.	Clear....	100 mm. Hg..	.....	Feels well; no longer sensation of palpitation or shortness of breath.
During test without belt.	6	2	.....	Upper margin of sixth rib.	18	90	Regular.....	Clear....	95 mm. Hg ..	0.5 cm. ext. to nipple.	

** The exact measures of the heart-limits are apparent in the appended special diagrams. The blank spaces under their headings are due to the impossibility of noticing every symptom simultaneously.

TABLE B.

F. S., masseur, aged 45; muscles powerfully developed; moderate adipose tissue; all examinations show normal conditions.

Conditions	Time. Hr.	Time. Min.	Kind of Motion.	Position of Diaphragm.	Respiration.	Pulse.	Quality of Pulse.	Heart Sounds.	Blood Pressure by Basch's Sphygmomanometer.	Apex Beat Seen.	Remarks.
Before wrestling.	1	35	.....	Sixth rib.....	12	90	Full, soft, easily compressible.	Clear....	135 mm. Hg..	1 cm. int. to nipple.	
	1	38	Three min. wrestling.	Sixth rib.....	.....	126	.....	.....	140 mm. Hg..		
During and after simple wrestling.	1	44	After 4 min. severe wrestling and lifting.	Sixth rib.....	.....	135	.....	.....	115 mm. Hg..	3 cm. ext. to nipple.	Free perspiration; severe dyspnea.
	1	45	1 min. pause.	.....	36	128					
	1	57	12 minutes' pause.	Upper margin of fourth rib.	21	116	.....	Clear....	125 mm. Hg..	2.5 cm. ext. to nipple.	
Wrestling with tightened belt around the abdomen.	2	2	After 4 min. wrestling and lifting.	.....	.....	148	.....	1st heart-sound little muffled at apex; not cl'r.	105 mm. Hg..	5.5 cm. ext. to nipple.	Severe dyspnea; deep respiration impossible; cyanosis of face.
	2	5	After 3 min. pause.	.....	20	110	.....	.....	125 mm. Hg..	4 cm. ext. to nipple.	
During pause without tightened belt	2	22	After 10 min. pause.	.....	14	104	Full, soft.....	Clear....	135 mm. Hg..	1 cm. ext. to nipple.	

1. These diagrams, as well as the above tables and series of curves, in all cases refer to the same two persons.

2. This colleague partly made all the observations referred to in the foregoing tables or tested their accuracy.

method, then also by myself according to my late brother's method of percussion with lateral limitations. These latter limits correspond to the total cardiac boundaries as has been fully demonstrated elsewhere. The cross near the nipple marks the place of the perceptible apex-beat in all cases. You will see by the diagrams how wrestling, when once it has called forth dyspnea, is able to dilate the heart, both to the right and to the left to the amount of 1 to 2 cm. and more. It is evident that this dilatation is produced only by the accumulation of blood in the cardiac cavities, a so-called congestive or passive dilatation having taken place. The ordinary method of percussion requires a cautionary measure. Then, when we percuss immediately after wrestling during the state of highest dyspnea, it may happen that we find not only no broadening of the originally determined heart limits, but even a transitory narrowing of these limits; in other words, the highly inflated lungs cover up the real heart limits. But after a short

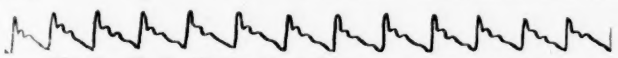


Fig. 1.—H. B. (Table A), 4:33 p. m., before wrestling.

Fig. 2.—H. B. (Table A), 4:45 p. m., after three rounds of severe wrestling.

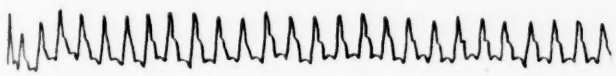


Fig. 3.—H. B., (Table A), 4:55 p. m., continued wrestling.

Fig. 4.—H. B. (Table A), 4:56 p. m., renewed wrestling.

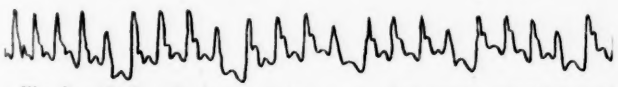


Fig. 5.—H. B. (Table A), 5:22 p. m., after severe wrestling with tightened belt.

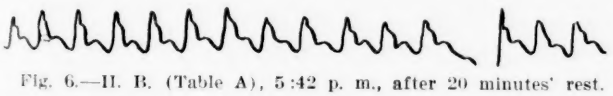


Fig. 6.—H. B. (Table A), 5:42 p. m., after 20 minutes' rest.

lapse of time (1 to 2 minutes) the real cardiac outlines appear; this proves that the extended dulness is not caused by a retrocession of the pulmonary margins, but that it corresponds to the real limits of the dilated heart-muscle itself. When the wrestling is allowed to be continued in such a manner that dyspnea is produced along with cyanosis a further lowering of the blood pressure may be observed besides the increasing dilatation as well as a still greater frequency of pulse, respiration, etc. The heart sounds, however, remained clear in both experiments, only in one instance was the first sound very dull at the apex.

Since it has been proved by various authors, among these v. Frey and Krehl,[3] that compression of the abdominal viscera with upward displacement of the diaphragm is of great influence on the amount of blood contained within the cardiac cavities, on the intracardiac pressure and on the activity of the heart in its entirety. I have instituted a second series of experiments, during which a belt was fastened about the bodies of the wrestlers below the costal arch and then tightened until they experienced the sensation of great constriction. In the wrestler H. B. (Table A) the diaphragm was pushed upward in this way to the amount of 2 cm. and in the wrestler F. S. (Table B) to the amount of 4 cm. Even this simple lacing of the abdomen was sufficient to call forth dyspnea and tachycardia. Especially the outward displacement of the apex-beat and the heart limits, as they have been determined by my colleague and myself before the wrestling, show how great an increase there was in the amount of blood in the heart cavities and how thus the clinical picture of acute dilatation had developed itself.

When the further wrestling movements were carried out energetically enough to lead to dyspnea the apex-beat was displaced very materially outward, in one instance even to the extent of 5.5 cm. beyond the mammillary line. Then the ventricles, and especially the auricles (see heart tracings), expanded considerably, all this within a few minutes. In the first case we have again an arrhythmic pulse; in the second, where I had to forbid severer wrestling on account of the greater cyanosis, only the smaller amount of blood in the radial

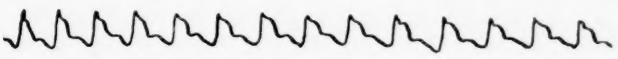


Fig. 7.—F. S. (Table B), 1:35 p. m., before wrestling.

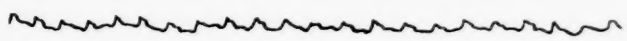


Fig. 8.—F. S. (Table B); 1:44 p. m., after 4 minutes' severe wrestling and lifting.

artery, along with regular rhythm, was observable. And here it was worthy of notice, that at the time of greatest heart dilatation and most marked dyspnea with cyanosis, the first sound at the apex was not accompanied with a murmur, yet it could not be called definite, being rather somewhat dull at a period when the left auricle had become extended to the amount of 3 cm. and the left ventricle to 2 cm., as compared to that which was already present during the pause, the wrestler still being laced.

For more explicit data concerning the frequency of pulse and respiration, the blood pressure, the heart extension, etc., I must refer to the accompanying tables and diagrams.

All the symptoms gradually recede again in healthy and strong individuals. With greater tightening of the abdomen and more intense wrestling, also when the dyspnea, eventually with the cyanosis and concurrently with a strong dilated heart was very marked, it required considerable time for normal conditions to reappear; in some cases I was even able to note a few abnormalities of heart and pulse, etc., after the lapse of two hours. In other cases where the group of symptoms does not develop itself so forcibly, it often happens that even after a short rest, entirely normal conditions are re-established.

Nowadays, through sport carried on to excess, we often have occasion to observe the effect of such excessive strainings on the heart, and bicycling is here of great importance. It was, therefore, of special interest to me

3. In their "Investigations on the Pulse" they describe this fact in the following words: "When in animals with opened thorax the abdominal viscera are being pressed against the diaphragm the heart may be seen to arch itself high up during its rhythmic pauses, the manometer in the artery showing a simultaneous increase of pressure. The pressure on the abdomen must be even and not too strong, otherwise the great afflux of blood to the heart brings about irregular beats. In the auricles especially a degree of repletion is easily attained which deprives them of the faculty of contracting, or at least allows only incomplete contractions. Ordinarily the rhythm of the ventricular beats is then also interfered with."

to study more closely the influence cycling had on the heart. To that effect I selected healthy, strong boys of the age of 13 to 15 years, who steadily bicycled, either on bad roads or on ascending grades or against strong winds. Pulse tracings showed the markedly increased frequency of the pulse, though all the boys felt well subjectively. In one case even we had arrhythmia, in another the pulse wave was very small or the elevation of elasticity scarcely recognizable. Here and there the systolic ascension amounted to only about one-third of that which the curves showed before the bicycling, the blood pressure being lowered; the heart expanded either in one or the other, or in both directions exactly in the same manner as shown in my investigations with wrestling. Here also all symptoms of heart insufficiency disappear in a short time after one single overstraining. In healthy persons this occurs sometimes after a few minutes, but when, by continued excessive sport, these symptoms frequently recur, they naturally increase in intensity and in duration, and then lead to the well-known chronic overstraining.

I also made such an investigation with a young bicyclist, 18 years old, who had a compensated mitral insufficiency. I had him run 10.6 kilometers in fifty-two

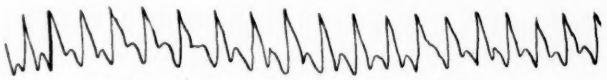


Fig. 9.—Cardiac neurosis; before bicycling.

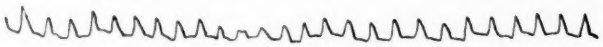


Fig. 10.—Cardiac neurosis; directly after bicycling.

Fig. 11.—Cardiac neurosis; after 1 minute rest.

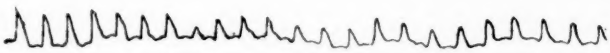


Fig. 12.—Cardiac neurosis; after 3 minutes' rest.

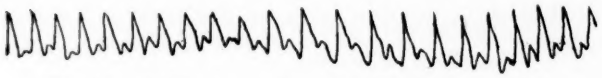


Fig. 13.—Cardiac neurosis; after 15 minutes' rest.

minutes on a bad, muddy road; here a still greater dilatation was manifested both to the right and to the left; this even persisted after one-half hour's rest.

The tracings are shown (Figs. 9-13) pertaining to a case of motor neurosis in a young man of 18 in whom rapid bicycling also caused a strong cardiac dilatation, a small pulse and strong palpitation; and even after fifteen minutes the sensation of cardiac fatigue had not entirely vanished.

In recent years I have also tried to investigate acute heart straining by means of the Roentgen rays. I have also succeeded, with the ordinary precautions, in showing the changes of form already mentioned. This procedure is easily carried out by means of the fluorescent screen. These changes of form naturally disappear rapidly in healthy individuals.

On the ground of their orthodiagraphic investigations, Moritz and Hoffmann denied these cardiac changes due to acute overstraining. But the fact that for the purpose of carrying on their investigations they placed the subjects in a horizontal position and the uncertainty, whether this position was always exactly the same before and after the experiment, make the method unreliable. Then the fact that the overexcited heart is able to undergo strong lateral deflections in the supine position also gives the possibility of error. My experiments have been fully confirmed by the observations of Starck, Baldes, Heichelheim and Metzger regarding the influence of great bodily straining on the circulatory apparatus, the kidneys and the nervous system. The last-named authors found that in persons from 17 to 27 years old, who had previously been examined and found to be healthy, the former normal heart limits had undergone a considerable expansion after a march of 100 kilometers, within one day and with hardly a rest; a few of them had not even resorted to the use of alcohol in any form. The

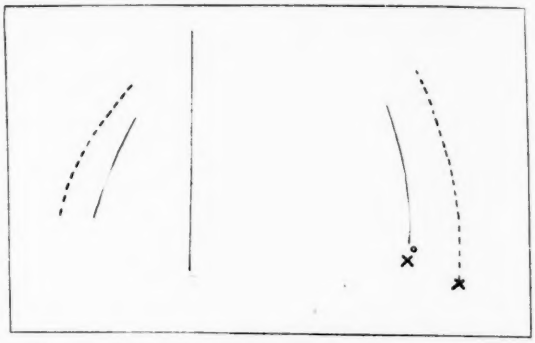


Fig. 14.—Heart-outline tracing of wrestler H. B. (Table A). Simple wrestling; percussion with lateral limitation. Solid curved line; heart-outline before wrestling; broken line, heart-outline after wrestling; the x represents the perceptible apex-beat.

frequency of the pulse was markedly increased, and the blood pressure considerably lowered in all the subjects of experiment, in some cases even to the amount of 25 per cent.

I trust I have proved by the above described experiments that acute overstraining of the heart really does occur, even in healthy individuals; in the latter this naturally disappears readily. In what manner and how rapidly normal conditions may again be re-established is a matter which depends essentially on the elasticity of the tissues, on the compensatory arrangements gov-

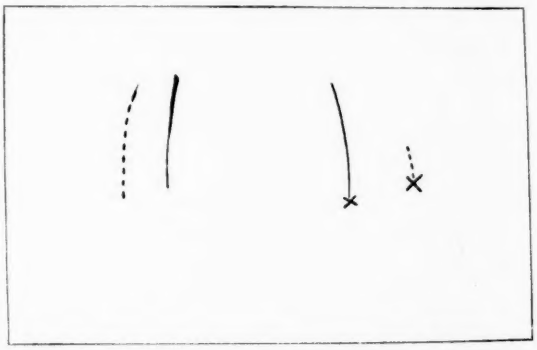


Fig. 15.—Same as Fig. 14 only ordinary percussion.

erning the vascular system, etc. Further experiments will have to determine what are the extreme limits of overexpansion of the heart, where the cardiac muscle has lost its normal capability of contraction. According to my experience, these limits seem to lie far apart in the living muscle in healthy, and especially in young, individuals. The same applies to the vasomotor compensatory appliances. With older persons when the tissues, especially the muscles, have lost a considerable part of their elasticity and the vascular walls have acquired a certain degree of rigidity another condition prevails. Here one single and rather trifling overstraining may

call forth permanent deteriorations, as clinical histories illustrate. And when further pathologic changes of the tissues, and especially of the heart itself, have taken place this organ becomes exposed to the dangers of overstraining to a still higher degree.

When even a healthy heart may be injured by an acute overstraining, how much easier must this be the case in a heart-muscle which is already diseased or whose nutrition or innervation has already been interfered with by disturbances of all sorts.

I was interested in knowing whether an acute overstraining of the heart was also possible in animals. Professor Schütz, pathologic anatomist of the Veterinary College at Berlin, has made inquiries for me of several

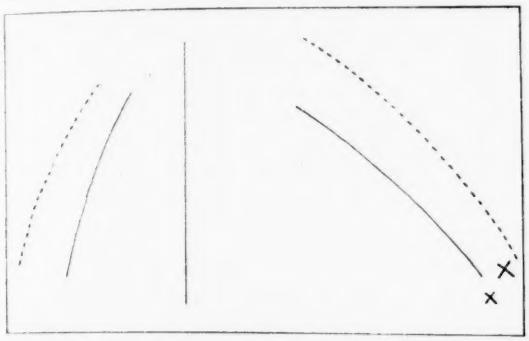


Fig. 16.—Heart-outline tracing of wrestler H. B. (Table A). Wrestling with tightened belt around abdomen; percussion with lateral limitation. Solid curved line, heart-outline before wrestling; broken line, heart-outline after wrestling; the x represents the perceptible apex-beat.

pathologic anatomists and veterinary surgeons. From the answers received and collated by me it is apparent that an overstraining of the heart does occur in animals, especially in horses and hunting dogs. But the physical examinations of the heart in animals meet with so many obstacles and the clinical observations are so difficult that it is easily understood why conclusions in this matter differ so much. Nevertheless so much may be gathered from all reports in question that overstraining in animals may also lead to dilatation of the heart and to

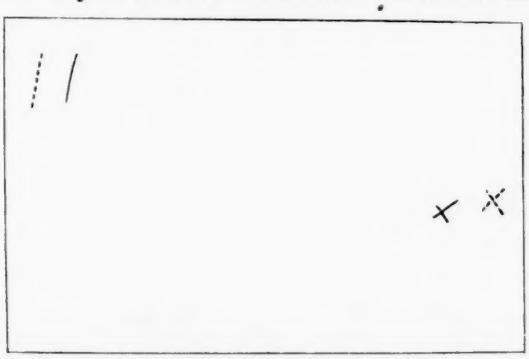


Fig. 17.—Same as Fig. 16, only ordinary percussion.

valvular insufficiency (mostly of the tricuspid, less frequently of the mitral valve) which later on may disappear entirely. Irregular and unequal pulse and similar disturbances appeared in the same manner as in man.

So far as exact investigations have revealed, rupture of the aorta was always the cause of sudden death in horses during racing, whereas an overdilatation of the heart-muscle never could be noted postmortem. The latter instance seems to find an explanation in the fact that in race horses the heart-muscle shows an extraordinary degree of development, and it is certainly of interest to learn that the heart of an English full-blooded race horse weighed 13½ pounds, whereas the normal heart of a common horse nearly twice as heavy only shows a maximal weight of from 8 to 10 pounds. Such a hypertrophied heart-muscle might easily be able to overcome even severe overstraining without being subjected to the dangers of overexpansion.

The prognosis depends above all on the age, the degree of overstraining, the nutrition and the occupation of the patients as well as on pre-existing complications. The more elastic the tissues, the better the nutrition and the care of the patients, the quicker will the disturbances disappear and normal conditions re-establish themselves. Patients that are run down or are compelled to contin-

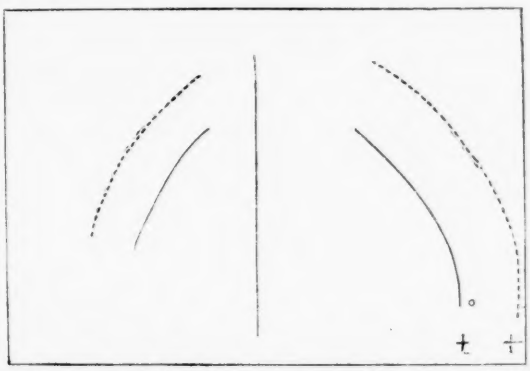


Fig. 18.—Heart-outline tracing of wrestler F. S. (Table B). Simple wrestling; percussion with lateral limitation. Solid curved line, heart-outline before wrestling; broken line, heart outline after wrestling; the x represents the perceptible apex-beat.

ually expose themselves to noxious influences, those also in whom valvular lesions, alterations of the heart-muscle, arteriosclerosis or other deteriorations are present, not only need a longer time for recuperation, but are also exposed to the danger that irreparable damage may be done.

As far as therapeutics are concerned it is hardly necessary to dwell on the fact that after an acute overstraining of the heart absolute rest is the first indication. Even the simple raising of the body in bed may call forth an

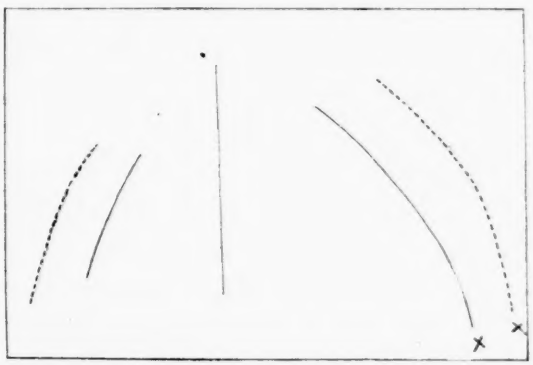


Fig. 19.—Same as Fig. 18, only wrestling with a tightened belt around abdomen.

aggravation. When an examination of the posterior parts of the lungs is required this should be made in the lateral position. Strong nutrition is always of importance.

Among medicines digitalis takes the lead; no substitute of any kind can approach it. For quieting the action of the heart the application of ice or of sinapisms on the anterior pectoral surface is indicated. It will hardly be possible to dispense with the use of morphin in order to alleviate the severe pains in the cardiac region, nevertheless it is advisable to be cautious in the

long continued use of large doses of this drug. I have had many cases where I was able to dispense with morphin and to replace it with the application of heat. All data concerning the above I have repeatedly given in some of my writings. The use of stimulants is indicated in excessive cardiac weakness and in threatened heart failure.

When by such therapeutic means we have succeeded in saving the patient from the threatening condition and when recovery from the injuries already present has taken place, it might be advisable to resort to tonics to counteract the heart weakness, this being liable to persist for a considerable time. Here also a generous nourishing of the patient is one of the most important tasks of the physician. A rational balneologic treatment, the careful use of gymnastics, suitable exercise in the fresh air, with the avoidance of any kind of straining, all come into consideration.

I shall now give the clinical histories of a few cases bearing on the subject.

CASE 1.—Farm laborer, 24 years old, came to me in August, 1879. Excepting the measles, the patient claimed never to have had any illness; he disclaimed using spirituous liquors to excess. He was of short, compact figure and gave the impression of being a strong man with well-developed muscles and but little adipose tissue. About four hours before he came to me he had been busy lifting several heavy sheaves of wheat at a time with a pitchfork instead of only a lesser quantity, as he had been used to do. These sheaves were heavy, even to raise from the ground, and when he came to lift them higher he had to drop them on account of sudden pains in the chest, dizziness, etc. The man rested for a short time and tried to raise a smaller load, but this also was impossible, for not alone pain but palpitation of the heart and dyspnea interfered. It even forced the patient to lie down. Since the symptoms did not cease he came to me four hours later, led by a friend. It took him about two hours for a walk of about twenty to twenty-five minutes on a completely even road. Walking caused great disturbance, and only with difficulty did he succeed in mounting the stairs to my apartment. The status was as follows: Facial cyanosis, marked dyspnea, small pulse; on investigation of the thorax the strong ictus cordis was very striking, apex beat could be felt outside of the mammillary line. The heart was dilated both to the right and to the left, heart-sounds clear. Patient was taken home in a carriage, was given digitalis, absolute rest being enjoined and strengthening nourishment being prescribed. The following day he only complained of palpitation and the second following evening he felt perfectly well, resting quietly in bed. Objectively I found the heart action still somewhat increased, though two days later an examination again revealed normal conditions. Nevertheless, the patient was not yet able to work because any kind of straining immediately called forth palpitation and shortness of breath, so that he left for home. I never learned anything further about him.

CASE 2.—B. F., aged 15¼, had always enjoyed good health and was said to have grown very rapidly of late. It was claimed that he was insufficiently nourished, even while undergoing considerable mental straining, still he never complained of being weak or not being well. For several years the patient rode a bicycle without noticing anything; in the beginning of the present year he began tricycling, which strained him considerably more. Once in the beginning of this year, having ridden more than two hours on his tricycle, he complained of an attack of dizziness and claimed to have perceived a purring noise in the region of the heart. This, however, was said to have disappeared spontaneously in a short time. A few days later he strained himself considerably by a long ride uphill on a steep and very bad road. In consequence of this not only did that purring noise in the cardiac region recur during the ride, but he experienced attacks of dizziness and fainting spells and had to dismount and lean against a tree. In this condition he was found and it was only with assistance that he could find his way home. The examining physician found a cardiac dilatation along with a systolic murmur at the apex, which, however, is said not to have been heard any more after a few days. The patient is said to have been very pale in the early stages. A few days later, when I first saw the young man, he complained only of dizziness. In the examination the cardiac hyperkinesis was very evident, the heart being still dilated to the left to the extent of 1 to 1.5 cm. With absolute rest and a strengthening diet, combined with slight resistance-exercises, complete normal conditions set in within a few weeks, and with proper care he remained in good health, as was reported to me some months later.

When we consider both of these cases we find that we have to deal with persons that had always enjoyed good health. In the first of these cases one single stronger bodily straining sufficed to call forth dilatation, tachycardia, dyspnea, etc.; in the second case these effects were produced by a preliminary smaller, followed soon after by a much greater strain, this being excessive for the youthful, mentally overworked and badly nourished organism. Acute overstraining of the heart takes place much more easily when the heart, through preliminary or existing alteration of the total organism, has already been disturbed in its nutrition or innervation.

CASE 3.—F. H., aged 18, was under my treatment from May 15 until June 27. Apart from measles at 8 years of age, she was always well until the previous year, when she complained of great fatigue, her physician diagnosing chlorosis. This chlorosis improved, but did not disappear entirely. She could climb hills without disturbances of any kind. Four months ago the young lady danced all night, and she admits having been tightly laced and the hall having been oppressively hot. Sometimes during dancing she had a sensation of darkness before the eyes, she experienced palpitation and shortness of breath. Nevertheless, and in spite of this group of symptoms constantly increasing in intensity, she only desisted from further dancing when she found herself compelled to drive home. The disturbances persisting, the following day the patient had to keep in bed. Her physician then noted the existence of a dilatation of the heart, and gave digitalis, also iron. The condition improved, yet walking sufficed to again bring on palpitation and shortness of breath. When I saw the patient there was still a dilatation of the left ventricle, amounting to 1.5 to 2 cm.; some chlorosis was still present. With suitable baths and gymnastic treatment, a diet rich in albumin and fat, seven more weeks elapsed before normal conditions could be ascertained. Since then the patient's health remained undisturbed. She married and went through four confinements without the occurrence of any further heart trouble.

Here also we find the one solitary severe straining calls forth the same group of symptoms, the essential difference being that this one single injury of the heart—and I have seen several such cases in chlorotic girls resulting from dancing—caused disturbances that lasted several months. It certainly must be considered here that the long duration of those symptoms is to be ascribed in a great measure to the anomalous composition of the blood and, as evidenced by my experiments, to tight lacing. It is not impossible that the narrowness of the aorta so often found in chlorotic patients and which by itself increases the labors of the heart may also be considered as a factor in the quicker production of cardiac overstraining.

Of course, cases of overstraining of the heart are apt to be followed by much more serious consequences where a severe cardiac or valvular lesion already exists. Such lesions often lead to long invalidism, sometimes even to rapid dissolution.

Similarly to bodily straining strong emotional disturbances, especially fright, may also act suddenly on the heart. Although I have at my disposal many clini-

cal histories of cases bearing on the subject, I must refrain from considering this matter any further at present, it being somewhat too far removed from my present theme. I hope, however, to be able to report on this very interesting chapter in cardiac pathology.

Clinical Notes

EXTENSIVE AVULSION OF SCALP.

REPORT OF A CASE TREATED BY PLASTIC REPAIR AND FOLLOWED BY TETANUS WITH RECOVERY.

H. A. HAUBOLD, M.D.

Professor in Clinical Surgery, New York University and Bellevue Hospital Medical College, Surgeon to Harlem Hospital.

NEW YORK CITY.

The case forming the text of the following communication illustrates certain points in the treatment of conditions which, while not frequently met, may and do occur in the practice of most surgeons, and, although no new principle is submitted here, the application of accepted ones deserves mention. Following so closely on the excellent summary[1] of the treatment of tetanus with serum by Jacobson of Syracuse and Pease of Albany, a discussion of greater length in this connection would burden unnecessarily the literature and serve no useful purpose. In looking over the cases forming the basis of Jacobson's and Pease's work, it would appear that they, like all of us who compile and deduce from the publications of others, were confronted with the fact that most important details are lacking in the reports of cases submitted by the various authors, and if this contribution seems somewhat protracted it must be ascribed to my desire to escape the fault of inaccuracy which may be the outcome of an effort to be brief.

Patient.—B. S., aged 7, was admitted to Harlem Hospital July 16, 1906.

History.—On the day of admission the patient had been knocked down by a trolley car, the fender of which pushed the lad along for a considerable distance, his head was ground along the rail and the scalp torn off from the left side of the skull.

Examination.—This disclosed a denuded area measuring about four by five inches. The wound was symmetrically egg-shaped and the periosteum corresponding to the surface indicated was also avulsed. The edges of the wound were deeply stained with the mixture of mud and grease which covered the street in the vicinity of the car rails. There were many contusions over the entire body, but at no place, other than the scalp, was the skin broken. There was considerable shock, but no evidence of cerebral involvement and no bones were broken. Reaction from shock was rapid and complete in a few hours.

Operation.—The wound was cleansed and dressed in the usual manner, and eight days after admission a plastic operation for repair of the scalp was made. The entire wound, fortunately, was within the hair area of the scalp, and permitted of the application of a flap-sliding method practiced by Volkmann and Messner. A study of the accompanying illustration will make the method employed sufficiently clear to render unnecessary further attempt at elucidation in the text. Mention may be properly made here, however, that early plastic operative effort, in injuries with considerable loss of substance, is a wise measure and should perhaps be more frequently performed than is usually done. More especially is this the case when ultimate cosmetic effect plays an important part in the problem presented. In this instance the flaps were all taken from portions of the hairy scalp, so that, when healing had taken place, there was no visible evidence of the injury. In this case delay may have seemed permissible on the ground that necrosis of bone would be the result of the loss of periosteum. It is, however, to be remembered that the external table of the calvarium is supplied with nutrition by the diploë, and that extensive necrosis rarely follows even severe and extensive injuries to the scalp and periosteum. Indeed, this is what happened in our case, if the rapid repair of the injury is to be regarded as an indication of the absence of this complication. There were no disturbances of importance following the operation, and repair seemed to progress satisfactorily.

Postoperative History.—On August 3, nineteen days after receipt of the injury, the patient complained of pain in the throat and inability to open the mouth fully. Up to this time the rectal temperature had been about 99.5 F., and indeed showed no increase at this time, but the pulse rate, which had up to this been about 80 per minute, rose to 98. The latter symptom we regarded as indicative of the first expression of toxemia.

The following day the mouth was firmly closed, but could be opened sufficiently for the purpose of taking food. While protruding the tongue for inspection a spasm of the muscles of mastication caused the tongue to be bitten. The pulse rate remained near 100, but there was still no rise of temperature beyond that mentioned.

August 5, about forty-eight hours after the first manifestations, the temperature rose to 103 F., and several convulsions of moderate severity occurred in rather rapid succession; the rigidity extended to the entire body and the pulse rate rose to 128 per minute. There was no disturbance of cerebration. The wound, which up to this time had been healthy, lost its bright red color; the granulations looked flabby and there was some secretion, but no pus, discharged from the raw surfaces. The line of union of the flaps remained firm, however, and did not at any subsequent period break down. I concluded that this was a clear case of tetanus, which, because of the long period of incubation (nineteen days), its gradual development and rather moderate expression, would probably run a rather favorable course. On this day the house surgeon administered antitoxin in two injections of 7 c.c. each into the buttock and one injection of 10 c.c. into the spinal canal. In the latter instance about an equal amount of spinal fluid was previously withdrawn. During the night an injection of 20 c.c. into the spinal canal was made.

August 6 the rectal temperature was about 103 F., and the other symptoms about the same. There was rigidity and occasionally a slight general muscular spasm, but the mouth could be opened for nourishment. Twenty c.c. of the antitoxin were injected into the spinal canal.

August 7 Dr. S. J. Meltzer saw the case with me. The temperature was still about 103 F., and the pulse rate 138 per minute. There was rigidity of all the muscles, but no distinct opisthotonos. The mind was clear; there were some sordes on the lips and the cornea was dull. The patient at this time had received 14 c.c. of the antitoxin injected into the buttock and 50 c.c. injected into the spinal canal, in four days. I had Dr. Meltzer see the case with the view of determining the advisability of making injections of magnesium sulphate solution into the spinal canal.

Following the publication of Meltzer's experimentation with magnesium sulphate injections into the spinal canal for the purpose of producing anesthesia and my own observations on human beings, Blake of New York City had used the salt in tetanus and found that spasm was controlled as the result for from twenty-nine to thirty-seven hours.

After examining our case, it was concluded that there was no special indication for the use of the magnesium sulphate, as spasm was not a marked symptom, and that if any unfavorable outcome was to be anticipated, it was probably more as a result of a general enfeebling toxemia, which seriously interfered with metabolism, and not as the outcome of a specific effect on the central nervous system. It is this conclusion which perhaps makes the report of this case valuable. All of us are inclined to look at our cases from the standpoint of what generally happens, and may thus be led to employ a measure which has a distinctly important office in most cases

1. Ann. of Surg., September, 1908.

of a certain kind, when in a particular instance the special indication lies in another direction.

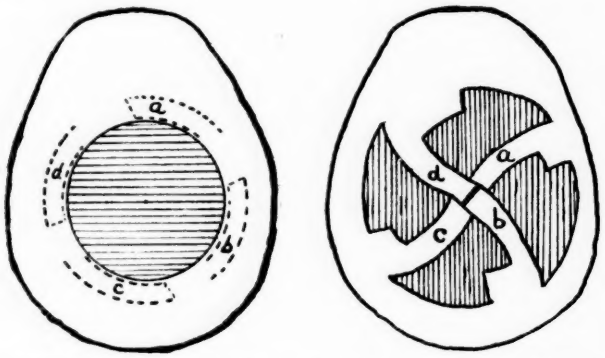
Dr. Meltzer suggested giving one intravenous injection of 200 c.c. of antitoxin on the theory that it was through the circulation that we should attack the disease. At the same time it was borne in mind that the blood already contained an antitoxin of its own creation, and that this rather heroic dose should not be repeated hastily, for fear of poisoning the patient with antitoxin. Accordingly, the patient was placed under chloroform narcosis; the median cephalic vein was exposed and 200 c.c. of the antitoxin slowly and carefully injected into the circulating fluid. That evening the rectal temperature had fallen to 99 F. and the pulse was 96 per minute. The next day the patient had no spasm and the muscular system was less rigid.

August 9, forty-eight hours after the intravenous injection, a slight convulsion occurred and the jaw became very rigid again. The symptoms, however, were not alarming.

August 10, three days after the intravenous injection, there was considerable rigidity and a more severe spasm. Twenty c.c. of antitoxin were injected into the spinal canal; the general condition was about the same.

August 11 the wound was dressed and appeared healthy. The patient had been very quiet, but when disturbed had a distinct opisthotonos. Twenty c.c. of antitoxin were injected into the spinal canal.

By August 14 there was still some rigidity, but no spasm for forty-eight hours. Trismus still persisted, but the general condition was favorable; the pulse was between 90 and 100 per minute and the patient took nourishment by mouth.



Volkmann's Plastic Repair of Scalp. (From Tillmann's Surgery.)

August 15 (the twelfth day of the disease) the patient had a convulsion and his temperature rose to 104 F., with the pulse 124. An intraspinal injection of 20 c.c. of antitoxin was given, and during the night the temperature dropped to normal.

From that time on the patient's condition gradually improved, although there was some trismus which persisted for several weeks after he was up and about. No more antitoxin was given.

Throughout the treatment the patient received 14 c.c. of antitoxin into the muscles; 100 c.c. into the spinal canal and 200 c.c. into the venous circulation.

The wound of the scalp healed completely, without untoward symptoms, beyond the unhealthy appearance alluded to, which occurred when the toxemia was perhaps at its height. This is probably ascribable to the modification of nutritive processes which occur during a toxemia.

The case may be regarded as teaching us that early plastic repair in extensive loss of substance is a wise measure; that, when muscular spasm is not a marked symptom, magnesium sulphate need not be administered and that in a certain class of cases, such as is represented in this instance, the toxin of the disease may be counteracted by the introduction of a considerable quantity of antitoxin directly into the blood current.

616 Madison Avenue.

MODIFIED CRILE ARTERY CLAMP,

PERMITTING BOTH SCREW AND DIRECT PRESSURE ADJUSTMENT.

FREDERIC WADE HITCHINGS, S.B., M.D.
CLEVELAND.

The fact that the temporary closure of blood vessels by means of instrumental compression requires careful regulation of the pressure employed is fully recognized in the idea embodied in the Crile artery clamp. In this instrument the pressure brought to bear on the vessel is regulated by means of a small thumb screw acting against a spring resistance. In order either to apply or to remove this clamp the thumb-screw must be turned several times, the number depending on the size of the vessel and the thickness of its wall. This is the antithesis of the non-adjustable spring clamp commonly used in experimental work which may be instantly applied or

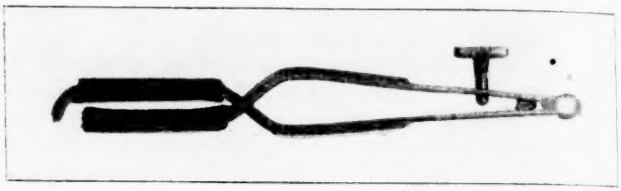


Fig. 1.—Showing position of the jaws with the thumb-screw loosened.

removed by compressing it with the thumb and forefinger, but which always has the same pressure whether too strong or too weak, and which is, therefore, entirely unsuited to clinical work.

As a result of clinical observation and of work on transfusion of blood done in Dr. Crile's laboratory, it occurred to me that it might be possible to construct a clamp which would combine the screw adjustment of the Crile clamp with the more rapid adjustment of the laboratory clamp. The illustrations show such a clamp as made from my model by the J. C. Ulmer Company of this city.

When the thumb-screw is loose there is lack of approximation of the jaws and hence no pressure is exerted

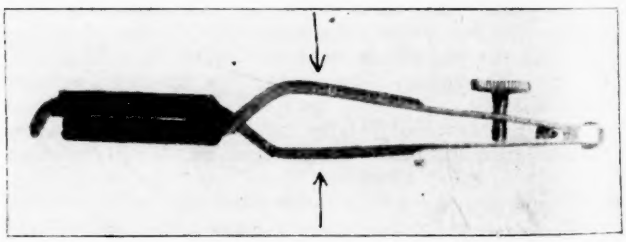


Fig. 2.—Showing the thumb-screw tightened and the jaws pressed together. The arrows indicate where the pressure is applied by thumb and forefinger to release the jaws.

(Fig. 1). Then if the thumb-screw be tightened pressure will be exerted by the jaws on a vessel lying between them which will vary with the extent to which the screw is made to impinge on the opposite jaw (Fig. 2). Finally, when this degree of pressure is obtained, the clamp can be instantly released and removed, *without loosening the screw*, by pressing the jaws together with the thumb and forefinger at a point between the screw and the blood vessel.

When the clamp is once adjusted to a given vessel so as to exert force enough to prevent the flow of blood through it without injuring the vessel wall, it is permanently adjusted to that vessel, and may be removed and

replaced with no fear of injury or of insufficient force being exerted. This will be appreciated when, for example, an anastomosis by Carrel's method has been completed and it is desired to test the connection before finally allowing the blood to pass from vessel to vessel. It is very true that it does not take long to do this with the Crile clamp, but the shortening of an operation even by seconds is to be desired, and, whereas in replacing the Crile clamp in a hurry an inexperienced operator may apply too much pressure, this can not be done with the modified clamp if properly adjusted in the first place.

Euclid Avenue and East One Hundred and Fifth Street.

A CASE OF BILATERAL BEZOLD MASTOIDITIS FOLLOWING ANGINOUS SCARLET FEVERS.*

ADOLPH O. PFINGST, M.D.
LOUISVILLE, KY.

The following case presents so many clinical features of interest that a full report seems justifiable:

History.—When I first saw this child the following history was obtained from the family physician: A girl, aged 11, previously healthy, began, on the third or fourth day, after the onset of a well-developed scarlatinal eruption, to show signs of involvement of the nasal, pharyngeal and faucial mucous membranes. Several days later the patient began to complain of pain in her left ear and on the following day both ears were discharging pus.

Examination.—There was marked involvement of the mucous membrane of the upper respiratory tract, especially of the nose. The turbinates were swollen, blocking the nares. They were bathed in a yellowish pus, which had caused an excoriation of the nostrils and skin beneath. A stringy muco-pus could also be seen on the posterior pharyngeal wall. Both faucial tonsils were enlarged and partially covered with a thin grayish-yellow deposit. A peculiar disagreeable odor was noticeable, emanating from the mouth and nose of the child. There was no glandular enlargement at the time. A rather thick pus was discharging from both ears through large openings in the posterio-inferior quadrant of the drums. There was no swelling of the ear canal nor over the mastoid and no tenderness over the bone. Temperature 99.5 to 100.5 F. The urine was normal. Owing to the obstruction, nasal respiration was interfered with. The enforced mouth breathing added to the discomfort of the child by causing a dryness of the buccal mucous membrane. There was some pain and considerable difficulty in deglutition.

Treatment.—The mucous membranes of the nose and throat were treated by spraying with a warm carbolic solution, the nasal passages being previously opened by the use of cocain. The tonsils were swabbed with a solution of potassium permangante and potassium chlorate, and the ears were irrigated every two hours with a warm saline solution under low pressure. The child continued to have from one to one and a half degrees of fever. She grew weaker and more emaciated daily, but showed no other symptoms, except the enlargement of the lymphatic glands of the neck. In two weeks the swelling had reached considerable proportions. Three weeks after the beginning of the otorrhea, the patient complained for the first time of pain in and behind the right ear, the left one being unchanged. She had been growing more irritable and resented any effort to manipulate the glandular mass. Pressure over either bone did not seem to elicit pain. There was slight swelling just at the tip of the mastoid which was apparently part of the general swelling of the neck. There was no swelling over the region of the mastoid antrum, and no sagging of the superior posterior wall of the external auditory canal. On the following day, however, there was decided swelling over the lower end of the bone, so that an operation on the right side was decided on.

Operation.—The conditions found were interesting. No pus was present external to the bone. The antrum was rather large and was filled with foul pus. After cleansing this and removing the neighboring diseased cells and curetting the aditus, I was about to dress the wound when, with the searcher, a small rough area was detected low down on the median side of the bone cavity. The removal of this area led to several apparently healthy cells and their removal uncovered another pus cavity. When this was thoroughly exposed by the removal of overhanging ledges of bone, a small opening was found leading into the digastric fossa, from which a small quantity of pus exuded when pressure was made below the tip. The entire tip was removed and the case dressed in the usual manner. Although the only symptoms of mastoid involvement noted on the left side were slight swelling and questionable tenderness, An exploratory operation was decided on. Conditions prevailed almost identical with those on the other side. Pus had not perforated the outer table of the bone. The rather large and superficial antrum was full of pus and communicated through several smaller diseased cells with a smaller pus cavity. This in turn was found to communicate by a small opening with the digastric fossa. The mastoid tip was removed entirely on this side also and the wound treated as it was on the right side. Both wounds closed in seven and one-half weeks and the drums were restored. The hearing, two months later, had returned to almost normal and the child is the picture of health, the glands in the neck having almost disappeared.

This case exemplifies the destructive nature of middle-ear abscesses complicating scarlet fever of the anginous variety. The other feature of interest was the development of the mastoid abscess with few or no symptoms. It would be impossible to determine how long the perforation into the digastric fossa had existed before the operation. The swelling and tenderness along the sterno-mastoid muscle characteristic of Bezold mastoiditis were entirely obscured by the marked glandular swelling in the neck. It is rather infrequent that the mastoid operation is demanded on both sides at once and a unique condition that both had perforated into the digastric fossa, especially in childhood when the antrum is superficial and situated high up.

* Read before the Jefferson County Medical Society, Feb. 15, 1907.

A HOSPITAL SIGNAL SYSTEM.

P. C. H. PAHL, B.S., M.D.
LOS ANGELES, CAL.

In October, 1904, I devised, for the Hospital of the Good Samaritan, a signal system for calling nurses to patients, which has the following advantages:

1. Noiseless. There being no bells, the call is absolutely silent.

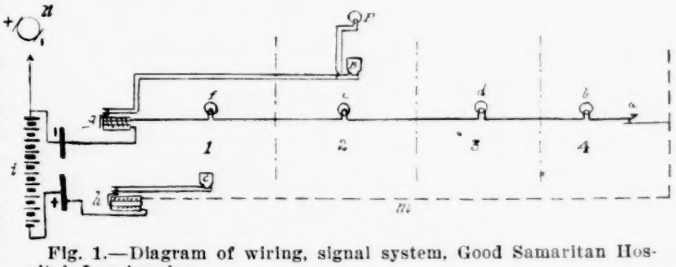


Fig. 1.—Diagram of wiring, signal system, Good Samaritan Hospital, Los Angeles.

2. Monitor board. This is in the office of the superintendent of nurses and enables this officer or her representatives to observe each call for the entire institution, thus making it possible to see at a glance the number of patients desiring the services of a nurse and the length of time elapsing before such call is answered.

3. Lights in the corridors. These are placed above the door of each patient's room, making it possible for the nurse, if she happens to be in the vicinity, to observe and answer the call without having to go to the indicator in the nurse's room.

4. Lights in the rooms. These are placed in such a manner that they may be readily observed by the patients, who may thus know, when attempting to signal for a nurse, whether they have been successful or not.

5. Specially constructed switches. These are placed in the rooms in connection with the lights and are operated by means of two cords. One of these cords passes through hollow moulding substituted for ordinary picture moulding, and leaves the moulding at the side of the bed, being so arranged as to be readily grasped by the patient who pulls it, thus closing the switch and putting on the signals. The other cord is placed in such a position that, while it is impossible for the patient to reach it from the bed, it is easily accessible to the nurse as she enters the room. Pulling this cord restores the switch and indicates that the call has been answered.

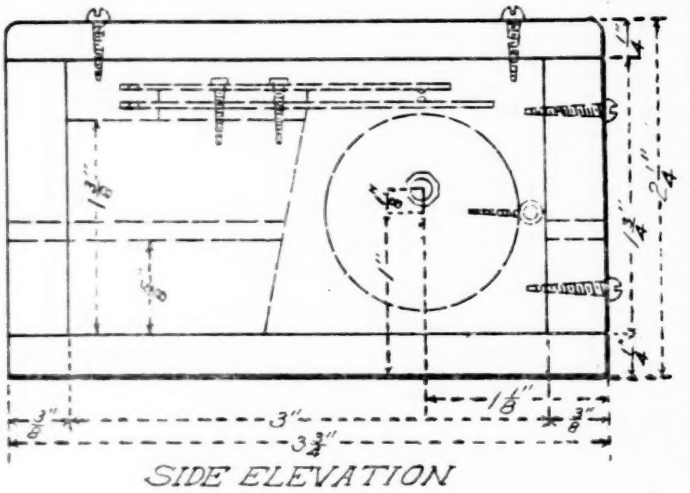


Fig. 2.—Switch for signal system.

6. Signal boards. The hospital is divided into five distinct departments, each under the charge of a head nurse who has her headquarters in a nurse's room. In each of these rooms is placed a signal board which contains the number of each patient's room in that department, so that only those calls are registered.

7. Pilot lights. Each department has its subkitchen in which is placed a pilot light which lights with every call in that department, thus enabling the night nurse, who spends considerable time in the subkitchen preparing diets, to observe when some one is signaling. On the ceiling at the intersection of the cross hall is placed another pilot light which lights simultaneously with the one in the subkitchen; this light is visible from any point in the halls of an entire department.

Figure 1 is a diagram of the wiring; *a* represents the switch (Fig. 2) located in the patient's room; *b* the light in the patient's room; *d*, the light in the corridor; *e*, the light on the signal board in the nurse's room; *f*, the light on the monitor board in the office of the superintendent; *g* is a relay in the common return to the signal board in the nurse rooms. Each time a call is made in that department this works buzzer *B* and pilot light *P* in multiple with it. *h*, located on the monitor board, is a relay in the common return of the entire system and causes buzzer *c* to operate when a call is made from any room in the entire hospital. The buzzers *B* and *c* are ordinarily not used, the pilot lights and the lights on the monitor board being sufficient. *m* is the common return and *n* the source of energy, which may be anything over fifty volts and which charges the storage battery *i*.

Figure 2 represents a specially constructed switch, the body of which is made of wood in which the two terminals are platinum points mounted on two German silver springs. The contact is made by causing a fiber cylinder to revolve on an eccentric of one-eighth of an inch.

This system has been in operation over two years and has proved to be a great help in giving prompt, efficient and noiseless service. Concerning the source of energy, if direct current exists in a hospital, the storage battery may be charged through a bank of incandescent lights; if only alternating current is available, however, it is necessary to install a small motor generating set with which to charge the batteries.

934 West Seventh Street.

THE INFLUENCE OF ALCOHOL AND CHLOROFORM ON PHAGOCYTOSIS *IN VITRO*.*

GEORGE RUBIN, M.D.
CHICAGO.

In a previous communication[1] I have shown how the natural defenses of the animals employed in the experiments were lowered or suspended when subjected to thorough narcotization. In the several series of experiments it was noted that the narcotized animals reacted poorly to various infections artificially produced. It was also shown that the recovery or death of the rabbits depended apparently on the condition of the leucocytes. Narcotized rabbits when infected showed a hypoleucocytosis of various degrees, whereas the controls usually showed a pronounced leucocytosis which was followed by complete recovery or at least survival of their narcotized fellows by a considerable space of time.

These phenomena suggested the possibility that the narcotics had a deterimental influence on the phagocytic function of the leucocytes. It was also shown that there is a more active intraperitoneal phagocytosis of carmine granules in normal than in narcotized animals.

It was now thought advisable to study the effect of narcotics on phagocytes *in vitro*. The technic employed is as follows:

* From the Pathological Laboratory of Rush Medical College, University of Chicago.
* Read before the Chicago Medical Society, March 27, 1907.

1. Influence of Alcohol, Ether and Chloroform on Natural Immunity in Its Relation to Leucocytosis and Phagocytosis, Journ. Infect. Dis., May 30, 1904.

Suspensions of various bacteria, especially staphylococci, pneumococci and streptococci, are added to defribinated dog blood containing alcohol or chloroform in varying proportions (table); the tubes are then carefully corked and placed in the incubator at 37 C. for 30 to 40 minutes. Then smears are made and the bacteria in leucocytes counted and averaged. In every case control experiments were made with mixtures of normal blood and bacteria.

Effect of Alcohol and Chloroform on Phagocytosis in Vitro.

No. of Experiments.	Degree of dilution of Alcohol or Chloroform.	Bacterium.	Phagocytosis Average number per Leucocyte.	
		Series I.—Alcohol.		
No. 1.	1 to 1000	Staphylococcus.	5.5	4.5
No. 2.	1 to 500	Staphylococcus.	14	25
No. 3.	1 to 400	Streptococcus.	2	4
No. 4.	1 to 300	Pneumococcus.	3	11
No. 5.	1 to 200	Pneumococcus.	1	7
No. 6.	1 to 100	Pneumococcus.	4	26
No. 7.	1 to 50	Pneumococcus.	0	5
		Series II.—Chloroform.		
No. 1.	1 to 2000	Streptococcus.	12.5	14
No. 2.	1 to 2000	Staphylococcus.	9	15.5
No. 3.	1 to 500	Pneumococcus.	4	10.5
No. 4.	1 to 400	Pneumococcus.	2.5	6.5
No. 5.	1 to 300	Pneumococcus.	2	8
No. 6.	1 to 200	Pneumococcus.	0	20

We see that 1 to 50 of alcohol and 1 to 200 dilutions of chloroform suspend phagocytosis *in vitro* completely. With the necessary dilutions there is an increase of phagocytosis, which, however, does not always appear to be proportional and the effect of the alcohol is practically lost at a dilution of 1 to 1000 and chloroform at 1 to 2000.

I will quote the work of Moore and Roaf[2] on the mode of action of the narcotics on the cells, which seems to agree with the results obtained in these as well as in my previous experiments.

From their numerous and ingenious experiments, these authors conclude that chloroform forms an unstable chemical aggregation with the proteids experimented with, and that it is carried on in the blood in such a state of combination.

Since proteids build up the protoplasm of the living cells, it appears to be probable that chloroform and other anesthetics must form similar combinations with protoplasm, and that anesthesia is due to the formation of such compounds which limit the chemical activities of the protoplasm. The compounds are unstable and remain formed only so long as the pressure of the anesthetic in the solution is maintained.

The action of the various anesthetics occurs not only with nerve cells, but with ciliated and other epithelial cells, with muscle cells of all types, with bacteria, with ameba and with unicellular organisms.

In all these varied types of living cells, activity decreases alike with increasing dose of the anesthetic, and with sufficient concentration all signs of life become obliterated.

Hence the action of the anesthetic must be due to some change brought about in the only material which is uniformly present in all these types of cells, that is the cell protoplasm.

We can easily see from the foregoing explanations how the phagocytic function of the leucocytes may be suspended or entirely destroyed by the toxic agents in question.

It was shown in the previous communication how alcohol, ether and chloroform alike affected the natural defenses of rabbits to various infections. The prominent rôle the leucocytes appeared to play in connection with their immunity was also pointed out.

With the experiments *in vitro* recorded in this paper, together with the excellent work of Moore and Roaf, we can conceive more clearly the influence of anesthetics on cell life in general and particularly on those cells which interest us most at this time—the phagocytes—both the fixed and circulating. The influence of the agents in question on the opsonins has not been studied so far. The behavior of the phagocytes in my experiments with inert substances (carmin granules) proves that so far as the above experiments are concerned the opsonins seem to play no rôle at all.

In conclusion, I desire to thank Professor Hektoen for his invaluable suggestions and courtesies.

2. Proc. Royal Soc., vol. lxxiii.

DEATH FROM ACETANILID POISONING.

A. L. SMEDLEY, M.D.
HAMILTON, OHIO.

Patient.—E. H. H., male, aged about 29, height 5 feet 11 in., weight about 190 pounds.

History.—When I returned to my house at 12:30 p. m., I found that the patient had been waiting for me about thirty minutes. During that time he had vomited twice and had asked for smelling salts, as he felt very ill. I found him very weak and cyanotic, with a slow pulse, and slow and shallow respiration. He stated that he had an intense headache and asked for something to relieve it. From the symptoms and general appearance of the patient I suspected acetanilid poisoning and asked him how many headache powders he had taken. He stated that he had taken three between 9 and 12 o'clock and that his headache became worse after each dose.

Treatment and Result.—I administered 1/20 gr. strychnin nitrate with 1/60 gr. atropin sulphate and told the patient to let me know how he felt in thirty minutes. The man left my house and walked home—about two blocks. As I did not hear from him in thirty minutes I left for my office and as soon as I got there I received a telephone message asking me to go to him at once as he seemed worse. I found him weaker and more cyanotic, with cold extremities and a pinched look. The respirations were almost imperceptible, the man scarcely breathed unless roused and told to breathe deep. At 2 p. m. I gave 1/20 gr. strychnin nitrate, 1/50 gr. digitalin, and 1/100 gr. nitroglycerin, hypodermatically. The man was given a hot pack, the feet elevated, and cold applied to the head. He was also given 20 drops of spirits of camphor in a teaspoonful of whisky, every half hour.

I called Dr. F. M. Barden in consultation about 4 p. m. At that time the man was in a severe convulsion and very cyanotic; the pulse was very weak. The convulsion lasted about ten minutes, when edema of the lungs developed and death ensued at once.

Postmortem.—Autopsy the following day showed edema of the lungs, dilatation of the heart, and congestion of the kidneys—a condition of acute cloudy swelling. All other organs were normal. There were about twelve ounces of urine in the bladder and examination showed marked traces of albumin.

The man's wife stated that he had not been feeling well for three or four days, and it is possible, I think, that he had suffered from grip which left an acute nephritis.

The powders in question were put up by a local druggist, who informed me that each powder contained acetanilid, 2½ grains; citrate of caffein, ½ grain, and sodium bicarbonate, 3 grains. The amount of acetanilid taken by the patient, therefore, was only 7½ grains, but the powders caused nausea and vomiting within an hour after he had taken them and his headache grew rapidly worse.

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SATURDAY, APRIL 27, 1907.

EFFICIENCY IN HEALTH ADMINISTRATION.

It is a significant sign of the times that the New York Academy of Medicine has established a section on Public Health. In an address[1] delivered at the opening of this section Dr. George A. Soper discusses the sanitary engineering problems of water supply and sewage disposal for New York City and certain other matters of general interest. He points out that authentic sanitary information is now desired by the public, but that it is difficult to obtain it, in the first place, because great universities have neglected to teach in an adequate manner sanitary science or preventive medicine, and, secondly, because physicians do not fully recognize their importance as sanitary teachers. For these reasons, a vast amount of technical knowledge has not been popularized sufficiently and public opinion has not been directed to the proper consideration of many topics relating to public health. One of the functions of the new section, therefore, must be to assimilate data and to help in the more rapid diffusion of knowledge in sanitary matters.

Unquestionably there is much of truth in what Dr. Soper says concerning the failure of universities and physicians to teach sanitary knowledge. It should be remembered, however, that a great deal, indeed a remarkably great deal, of efficient work in this very line has been done and is being done by institutions of various kinds as well as by physicians individually. The reason, or, rather, one highly important reason, why the public has not profited to the fullest extent from the available sanitary knowledge seems to lie in the general failure under our political system to secure as public officials men with the necessary special training and expert knowledge. This, of course, is true not only with respect to health officers of various kinds, but to an equal degree with respect to many other departments of public service.

In our political life it is unfortunately the usual thing that men are installed for a brief period in important positions for the efficient exercise of the duties of which they are fitted neither by experience and training nor special natural gifts. One consequence is that while the established routine work of various offices may be carried on in a fairly satisfactory yet often crude way, new and progressive policies in harmony with changing conditions and increasing knowledge are not introduced so promptly as they should be and the necessities of the future and of more or less unexpected emergencies are left without adequate provision. It is only too true, as Soper says, that "thus far, in the history of sanitation, the great strides of progress have usually resulted from emergencies. . . . Unfortunately this method of progress still prevails to a large extent through the country." In evidence of the truth of this statement it is necessary to mention only the sudden changes in water supplies so often precipitated by avoidable and predictable epidemics of typhoid fever.

Progress in other branches of public service also commonly seems to proceed from analogous causes. The better way, and the way more likely to be followed when departments of public service are managed by men with special training and expert knowledge, is to make the schemes necessary for improvement while there is ample time for careful investigation and preparation. Hence, public opinion and the attention of those with appointive powers should be continuously directed toward the vital importance of special, technical qualifications in our public services. This applies with especial emphasis to the departments charged with public sanitation, because in their particular case prevention is the peculiar function, and the conditions to be prevented must be foreseen and removed so far as possible before they result in disease. "The highest skill and wisdom are none too great to enlist" in the practical application of technical knowledge derived from diverse sources in order to prevent disease and to render human life pleasant and healthful. The city of New York is able to furnish us a fortunate example in the way of efficiency in health administration.

1. Science, April 19, 1907, p. 601.

TYPHOID FEVER IN THE DISTRICT OF COLUMBIA.

There have been few greater surprises to sanitarians than the singular prevalence of typhoid fever during the past year in the District of Columbia. In the autumn of 1905 a modern sand filter, designed by and constructed under the supervision of some of the most eminent sanitary engineers in this country, was put in operation in the city of Washington. The particular mode of treatment adapted for the water of the Potomac River, the character of the plant and the details of operation had been long and thoroughly discussed and studied by qualified experts. It was confidently expected, therefore, that the operation of this filter would be followed by the same results that have been observed in Lawrence, Mass., Albany, N. Y., and other places in this country where a filtration plant of similar character has been installed. Surprise and consternation resulted when, in July, 1906, the number of cases of typhoid fever in Washington suddenly increased so that the disease was regarded as prevailing in epidemic form. Since the Potomac River water had long been known to be polluted, and since sand filtration elsewhere had

been shown to purify effectively waters of a similar character, the recurrence of the disease under the greatly improved conditions was a matter of keen disappointment to both the medical profession and the public at large.

In view of these rather extraordinary conditions, a commission was appointed by the Surgeon-General of the Public Health and Marine-Hospital Service, comprising a number of capable officers of the Hygienic Laboratory and the Public Health and Marine-Hospital Service. In fact, during the summer of 1906 almost the entire force of the Hygienic Laboratory concentrated its energies on this problem.

The investigation included: A sanitary survey of the Potomac watershed; a searching epidemiologic study of the 866 cases of the disease occurring in the District of Columbia between June 1 and October 31, 1906; daily chemical and bacteriologic examinations of the public water supply; a special study of the pumps, wells and springs in the District and also of the bottled waters on sale in Washington; inspection of dairies and laboratory examinations of the milk supply; inspection of ice factories and analyses of the water from which the ice was made as well as of the ice itself. Special attention was directed to the communicability of the disease from person to person by direct or indirect contact. The agency of flies and other insects as carriers of infection was a subject of special investigation.

As a result of this comprehensive study certain conclusions and recommendations were arrived at by the board of commissioners, which will soon be printed in a bulletin of the Hygienic Laboratory, an advance copy of which has been sent to us through the courtesy of Surgeon-General Wyman. Only a few of the findings of the commission can be mentioned here. The commission notes in the first place that the prevalence of typhoid fever in the District of Columbia during the period covered by their investigation was due to several causes, about 15 per cent. of the cases being imported, 10 per cent. being attributed to infected milk and 6 per cent. to contact, leaving 69 per cent. unaccounted for. Particularly interesting, in connection with the contact cases, are the observations on the inefficiency of measures for the disinfection of the discharges from the bodies of typhoid fever patients. The report of the commission is definite and emphatic on this point: "The destruction of the infection as it leaves the body is the most important measure to prevent the spread of typhoid fever. In our opinion, it is the duty of the attendant physician to see that these measures are effectively carried out. It is evident from the above figures that this important prophylactic measure is not carried out as it should be in the District of Columbia. If this condition of affairs can not be corrected then we should recommend its enforcement by legislative enactments."

We have more than once had occasion to call attention to this important subject. There is no reason to think that in this respect physicians of the District of Columbia are less insistent than physicians of other cities in having the details of prophylactic disinfection carried out. The warnings of the commission can not be too often repeated and insisted on. There can be no doubt that rigorous disinfection would diminish enormously the transmission of typhoid fever, although in view of the recent developments regarding bacilli carriers it is certainly not fair to assume that the disease would completely disappear if known cases are properly disinfected and cared for.

Another thoroughly investigated question was the milk problem, and the report of the commission on this subject is explicit and well considered. Although the evidence that was secured indicated that not more than 10 per cent. of the cases studied were due to infected milk, the commission does not hesitate to state that: "While the present outbreak of typhoid fever is by no means wholly attributable to milk, the wonder is, judging from our observations of the milk business in the District of Columbia, that more illness and disease is not spread through this medium."

One of the most interesting sections of the report discusses the probable relation of the public water supply to the recent epidemic, and a number of arguments in favor of the view that the filtered Potomac water played an important part in the dissemination of typhoid fever are marshaled in an impressive manner. On the other hand, reasons in favor of the view that the Potomac water had little, if any, share in the dissemination of typhoid fever in Washington are likewise considered. This perplexing matter is summed up finally as follows: "In view of the foregoing, it is evident that at present it is not possible to present satisfactory proof of the part played by the Potomac River water in the spread of typhoid fever in the District of Columbia; therefore, the commission reserves final decision on this subject until investigations, now in progress at the Hygienic Laboratory, have been completed."

While this verdict leaves the country in suspense as to the actual situation in Washington, it seems to venture about as far as is warranted by the evidence presented in this report, and it certainly has not been proved that the filtered water supply was responsible for the recent epidemic. The weight of evidence that has been accumulated in connection with the installation of successful filtration plants in other cities would seem rather to throw the burden of proof on the other side. Some stress has been laid in the report on the seasonal incidence of typhoid fever in Washington, the disease being here, as in many other places, peculiarly a summer infection. The coincidence of the maximum amount of typhoid fever with the prevalence of the house fly has not been overlooked, but we believe that even more significance might be attributed to this point. On the other hand, the hypothesis of an increased susceptibility to typhoid fever in warm weather has something to recommend it, especially in view of the seasonal incidence of infantile diarrhea, a disease in which increased sus-

ceptibility doubtless plays a rôle. Inconclusive as the report is, it must certainly take rank as one of the most thorough and extensive studies of an outbreak of typhoid fever, not due to water pollution, that has ever been made. That the Washington situation is still a puzzling one is in no wise the fault of the authors of this important document, but is rather due to our incomplete epidemiologic knowledge.

CATERPILLAR RASHES.

The introduction of the brown-tail moth, *Porthesia chrysorrhœa,* into Massachusetts and New Hampshire, and its almost certain spread into neighboring states, needs comment at this particular time, as summer is approaching, and the peculiar skin eruption resulting from contact with the insect has not yet become widely known in the United States. The results of the action of certain poisonous plants of the *Rhus* family are widely known both by the laity and the profession, but even physicians have not yet become acquainted with the irritant effects produced by these moths and their caterpillars.

The knowledge of skin rashes due to caterpillars dates back to the time of the ancients; in modern times the matter has been commented on mainly by the entomologists, who, in making their collections, have occasionally been poisoned. In recent years the attention given to nature study, even in the primary schools, has rendered the collection of caterpillars and moths by children common, and the bright colors of some of the poisonous varieties have added to the collector's zest. In places, too, as recently in the states named, the brown-tail moth, one of the poisonous species, has flourished exceedingly, and opportunities for poisoning have consequently increased. This will be better understood when it is explained that actual contact with the caterpillar or moth is not necessary, and that underclothes dried in the open in the neighborhood of infected trees may become the receptacles of the poison.

Clinically, the poisoning appears in two forms, as Tyzzer[1] has pointed out in his interesting study. If the poisoning results from direct contact, as when a caterpillar falls on the neck and is brushed off, a marked local dermatitis appears, confluent in character, and characterized by reddening and thickening of the skin with the formation of papules and vesicles. Children who handle caterpillars and then, as often happens, rub the eyes and face with the infected hands, develop more discrete lesions often associated with conjunctivitis. When underclothes become infected, too, the lesions are more discrete, and in the form of papules which change to vesicles.

That the hairs of the caterpillar, or to be more exact, the barbed or "nettling" hairs, are the poisoning agent has been known for some time. The transmission of the irritant by these hairs, even when dried and detached from the insect, explains the occurrence of the rash after wearing underclothes dried in the open, and the occasional occurrence of the dermatitis after merely walking in the neighborhood of thickly infested trees. The older writers were of the opinion that the irritant quality of the hairs was purely mechanical and due to their barbed shape, but the careful studies of Tyzzer have shown that this is an erroneous view. A definite toxic substance of an irritating character is contained within the nettling hairs; it can be destroyed by heat, is soluble in water at certain temperatures, and produces peculiar and characteristic changes in red blood corpuscles brought into contact with hairs which contain it. The intensity of the lesions produced by the introduction of the barbed hairs into the skin depends to a certain extent on the number of hairs introduced; the character of the lesion is always the same, consisting in a necrosis of the epidermal cells about the hairs, the formation of microscopic vesicles about the site of injury, and the production of inflammatory changes around the vessels of the corium. As in most toxic diseases there are marked individual variations in susceptibility, and in caterpillar dermatitis, just as in rhus poisoning, some are very susceptible, and others apparently immune.

1. Jour. of Med. Research, March, 1907, abstracted in this issue of THE JOURNAL, p. 1460.

JUDICIOUS LUNG GYMNASTICS.

Some pertinent criticisms of the chest-swelling drill so dear to English army traditions have recently been expressed by Lieut. Col. F. A. Davy, M.D.,[1] who finds the "setting-up" drill, by which the military bearing is attained, to be wrong in theory and injurious in practice. This army surgeon asserts that rigid shoulders and protruding chests interfere with the normal course of the circulation. The exercises which bring about these results really invalid many men; they do not benefit the defective, but, on the contrary, often harm even the strongest. "Holding the breath" is condemned as disturbing the balance between the respiratory and circulatory systems and as being directly in contravention of physical laws. Dr. Davy declares that soldiers would be stronger and healthier if they were permitted to abandon the attitude they have worked so hard to attain, and to carry themselves much as the man on the street does. He finds that increased chest measure is often gained at the cost of motility and vital capacity; the young recruit much too often presents on examination a rapidly beating heart, a shortness of breath and a very decided discomfort.

It is common to find men who have been athletes during their college days to be suffering from hypertrophied and even chronically dilated hearts, with blowing murmurs, especially pronounced at the carotids. These men pant easily and tire in a most distressing

1. Davy (F. A.): Army Medical Dept. Report for 1905, Lancet, Feb. 16, 1907.

way on slight exertion. They are not nearly so "fit" as men who have lived normally, without attempting to "build muscle" by means of inordinately severe exercises. Woods Hutchinson tells us that, according to statistics, athletes are two and one-half times as liable to cardiac diseases, 60 per cent. more liable to kidney diseases, and 25 per cent. more liable to die of the three main infectious diseases of adult life than the average man. No doubt the same will be found true of those workingmen who most frequently subject their bodies to heavy and exhausting strain.

For phthisical individuals lung gymnastics should certainly be interdicted in the presence of a decidedly subnormal temperature; or when there is fever (certainly when 100 degrees is reached), in cavity formation, in all acute processes, in evidently advanced disease, in tuberculous laryngitis, in rapid pulse and tumultuous heart, in fatigue or dyspnea on exertion, in hemoptysis or blood-streaked sputum, in pathologic blood conditions, in recent pleuritis, in other intercurrent or complicating diseases, when the weight is much below the normal for the patient's height, when strength and vitality are much reduced. It must be always remembered that in phthisis the organism is on the verge of bankruptcy, and may easily collapse with immediately fatal issue when the imposed exercises are excessive or beyond its strength. Of course, before prescribing "deep breathing, with the lips closed," the upper air passages should be examined for hypertrophies, exostoses or other obstructions to respiration.

THE DIAGNOSTIC DOSE OF TUBERCULIN.

It is an unfortunate fact that the manner in which tuberculin first came into use led to a revulsion of feeling against it on the part of many physicians. Once introduced, and if it had not been that Koch's hand was forced its introduction doubtless would have been delayed, it was hailed with acclamation and used without discrimination, with the natural result that its good features were overshadowed by the resulting catastrophes. Notwithstanding the manner in which the majority of physicians have since held aloof from it, many of the lung specialists have used it continuously for both diagnostic and therapeutic purposes. Its value in diagnosis can be readily understood when it is stated that from 50 to 80 per cent. of the patients who enter the German sanatoria for pulmonary tuberculosis have no tubercle bacilli in their sputum. Many of them have very slight physical signs of tuberculosis, and in many of these cases it is doubtful whether the signs represent an active process or are the result of healed tuberculosis or a pneumonokoniotic process. The necessity of a correct diagnosis in these and other doubtful cases is especially great from the patient's standpoint, for it may mean the difference between freedom and a long sojourn in an institution.

One of the most serious errors which attended the administration of tuberculin in the early days after its introduction related to dosage. There can be little doubt that too large amounts were given, with resulting severe local and general reactions and positive harm to the patient. Wright's work on the opsonic index has exposed the fallacy, so far as the therapeutic use of tuberculin is concerned. Whether or not we have been giving too large doses for diagnostic purposes is still under discussion. At the Tuberculosis Congress in Paris in 1905 Löwenstein and Kauffmann claimed that the dosage used to-day was much too large, and that 2/10 milligram repeated three or four times at intervals of a few days was sufficient. The old Koch method was to begin with one milligram and gradually increase to ten.

The relative value of the different doses has been tested by Roepke[1] on over 700 patients. He soon came to the conclusion that the dose advocated by Löwenstein was much too small, as it entirely failed to produce reactions in most of the patients with early lung signs on whom it was tested. Roepke also concluded that the doses used in the old Koch method were unnecessarily large, and that it was not entirely the question of dose, but also the matter of sudden increase in dose which decided the reaction. He found 2/10 milligram was enough for an initial dose, and recommends giving five times this dose in a few days, i. e., one milligram, and a few days later, if no reaction has occurred, five times the second dose. This gives results equally as good as the old Koch method and with only half the maximum dose. The tuberculin reaction is unquestionably of great value in diagnosis, and it is to be hoped that the profession at large will recognize that the procedure is not dangerous if properly carried out.

GRADUATE MEDICAL STUDY.

The need of graduate technical instruction has been apparent for some years. The introduction of new methods of diagnosis and treatment requiring the use of new instruments and apparatus has rendered the education of the physicians, as given at the medical schools of ten to twenty years ago, entirely inadequate for the needs of the present day. This need has been but imperfectly supplied by the graduate school and to meet it more perfectly there has been developed in Prussia and extended over the German Empire a system which is in striking contrast with those formerly in vogue. In the first place it is designed to furnish what is essentially free instruction to all physicians. A small registration fee is charged for some courses amounting only to two or three dollars. Secondly, instead of concentrating the instruction in large cities it is aimed to carry it to the less populous centers where the physicians from the smaller towns and villages can attend without having to travel far. The course usually is about two weeks long and the distance being small, the doctor can go

1. Ztschr. f. Tuberculose, March, 1907.

home once during the course and could be called in case of emergency without great loss of time. Thirdly, the courses are for the most part didactic and technical but not clinical. The reason for this is that while the necessary apparatus for demonstrations and practical laboratory instruction can be found in the smaller places, or can be easily transported, and the specialist may go without inconvenience to the smaller town to deliver a lecture, clinical material can be obtained in sufficient abundance only in the large city. The system is managed by a central committee located in Berlin and is brought to public notice by a special journal[1] which appears twice a month. In addition a center for the direction of the movement has been provided in a building, known as the Kaiserin Friedrich House, devoted to the purposes of such technical instruction. This central building serves as a central office for information and direction of the movement and as a storehouse for collections of specimens, etc., to be loaned gratis to the various local centers where courses are to be given. It also provides laboratories for technical instruction, lecture rooms for didactic but not clinical lectures, and it contains, besides, a permanent exhibition of instruments and apparatus for the use of physicians where the visitor may see and examine the newest and best devices and determine what he needs. The plan has been successful from the first so that about one-third of the physicians of the empire have taken part in the courses. The subjects include in some cases a review of the entire medical curriculum, while in others special work is done in medical chemistry, bacteriology, electricity, Roentgenology, physical therapeutics, etc. There appear to be many features of this scheme for post-graduate professional education that are applicable to American conditions. The busy physician who can not get away to take a course in some large city is usually within easy reach of some college town where laboratory facilities could be provided and where he could go and return to his home at night. Specialists who could expect to receive patronage from a group of village or country physicians would doubtless give demonstrations of methods of instrumentation with which the practitioner should be familiar. County societies could easily arrange short courses with the help of a central organization which could take advantage of the resources of the universities whose aid in carrying out such a plan could confidently be relied on.

1. Ztschr. f. aerztl., Fortbildung.

HOSPITAL MANAGEMENT IN ST. LOUIS.

St. Louis is presenting a gratifying spectacle of a united profession attacking one of the important medico-political problems, that of hospital management, and endeavoring to free the municipal hospitals from the interference and domination of practical politicians. In 1905, according to the *St. Louis Medical Review*, the eleven medical societies of St. Louis, embracing all branches of medicine and all therapeutic creeds, formed a joint medical council for the purpose of effecting reforms in public medical matters. The first subject chosen was hospital management, and the council found certain defects which it traces to the fact that under the present system all appointees, from the hospital superintendent down to the most humble employé, are subjects of political patronage. The results, which are unsatisfactory under a good administration, become chaos when the administration is a bad one. To remedy these conditions the council proposes: 1, separation of the health department from the hospital department; 2, vesting of control over the hospitals in a board of trustees, similar to the present school board, and elected by the people; 3, provision for an executive superintendent or steward; 4, provision for a medical staff of experienced physicians appointed by the board of trustees for a term of years; 5, provision for an interne body of physicians, to be chosen on the basis of competitive examination conducted by the staff, such internes to be responsible to and under guidance of the medical staff. These proposals have been modified in a bill to be presented to the municipal assembly providing for submission to the people of the necessary amendments to the city charter. The council has received assurances of support from over a dozen of the most intelligent representative bodies of citizens, and apparently the only evidence of lack of unanimity in the good work is the attitude of the politically constituted health board. This body, although it has formerly busied itself in legislative matters for the good of the public, suddenly discovered that "its functions are purely administrative, it had no jurisdiction whatever over matters of this kind, and that, under the circumstances, nothing could be gained by a further discussion of the subject." That hospitals should be taken out of politics needs no argument. They are semi-educational institutions which have important functions in the way of clinical teaching and research work in addition to the care of the sick, and they need the peace and permanence of administration essential to the carrying out of definite policies. It is to be hoped that the efforts of the St. Louis physicians will be successful and will serve as an example and encouragement to other communities, showing what physicians can accomplish for the public welfare by united effort, and pointing to the ideals of management of medical institutions, toward which all ought to strive.

THE PRESERVATION OF MOSQUITOES DURING WINTER.

It has long been known that mosquitoes hibernate during winter, and are thus preserved from season to season. In view of recent experiments conducted by Passed Assistant Surgeon Francis[1] of the Public Health and Marine-Hospital Service, it appears very probable that the *Stegomyia calopus* is also preserved in another way, thus in two ways being able to survive a southern winter. Francis collected eggs of this genus of mosquito in Mobile, Ala., Aug. 16, 1906, and preserved them in the dry state at practically outdoor temperatures until Feb. 27, 1907, a period of six and one-half months. Water was then added, and the eggs developed into adult mosquitoes; these in turn laid eggs which hatched into larvæ, thus completing the life cycle. The length of

1. Public Health Reports, xxii, No. 14.

time stegomyia eggs can withstand desiccation has been variously stated. Theobald mentions two months.[2] Reed and Carroll[3] kept them for ninety days without destroying their fertility. The latter observers also noted that freezing did not destroy their viability. Observations regarding the habits of this mosquito are of much importance, since it is responsible for the transmission of yellow fever, and Francis' studies are of value to sanitarians, as they readily account for the propagation of this species in our southern latitudes. Francis also reports having found this species during every month of the year—an important point which indicates the necessity of continued efforts looking to their destruction. In view of our present knowledge it is fortunate that the statements of Marchoux and Simond[4] regarding the hereditary transmission of the virus of yellow fever have yielded only negative results in the hands of other workers.

DEATH OF THE EDITOR OF THE LANCET.

We are called on this week to chronicle the death of Thomas H. Wakley, F.R.C.S., Eng., senior editor of the London *Lancet*. His death removes from the journalistic field one of its great men; one who has helped to build up a great paper, and one whose personality had its influence on every department of the business under his direction. The *Lancet's* work in the analysis of foods and medicines has been a most valuable contribution to progress. We can speak no better eulogy of Mr. Wakley than to quote from the "In Memoriam" of the *Lancet*, April 13: "He was bold in exposing evils of a general or public character; hearty in helping forward every public advancement; zealous to make the *Lancet* the first chronicler of any new and promising progress in the science and art of medicine; and especially anxious to make it useful in works which were of a sound philanthropical and beneficent nature."

PURE MILK OR BLENDED WHISKY.

As we go to press we learn that the substitute pure food bill now pending before the Illinois Legislature has been amended so as partially to restore its usefulness. This bill is a makeshift substitute for a carefully drawn and thoughtfully considered bill formulated by the state Pure Food Commission. The original bill contained practically the same provisions as the national Food and Drugs Act, modified for state purposes. It also contained special provisions for a pure milk supply and regulated conditions in the dairy farms as well as methods of transportation and delivery. The substitute bill contained none of these provisions. It is stated in the daily press that the chairman of the committee on manufactures induced the speaker of the House to omit these provisions on the ground that they would interfere with the butter, milk and cheese business. It has also been stated that the Elgin Board of Trade, which practically controls the butter market, was influential in bringing about this change. The position of the business men seems to be that cleanliness is expensive and will lay too heavy a tax on the business and that the people of the state, in order to protect the profits of the business, should take the consequences in the shape of dirty milk. It has been charged that a lobbyist, interested in blended whisky, was allowed to deliver the bill to the printer (!) and took advantage of the opportunity to "improve" the bill in its portions referring to whisky. It might be well for the medical profession in Illinois to ascertain whether the pure food bill now pending is for the benefit of the people or was drawn in the interests of dirty milk and blended whisky.

2. Monograph of the Culicidæ, 1903, III, p. 6.
3. Medical Record, lx, p. 645.
4. Ann. de l'Institut Pasteur, xx, p. 16.

Medical News

ILLINOIS.

Epidemic Diseases.—Three new cases of scarlet fever were discovered in Rockford, April 15, all on the West Side. The center of infection from which the cases originated has not yet been discovered.——An epidemic of measles is reported at the Soldiers Orphans' Home, Bloomington, where 45 cases and 4 deaths have occurred.

Personal.—Dr. David C. Kretzer, after three years' duty with the Philippine constabulary, has resigned and returned to his home in Decatur.——Dr. Frank H. Gardner has been elected president; Dr. Henry S. Bennett, vice-president, and Thomas J. Lamping, secretary-treasurer, of the Moline City Hospital. ——Dr. John W. Dryer, Aurora, while bicycling, was thrown to the pavement by a runaway horse and suffered severe cuts and contusions of the face and body.——Dr. Charles C. Rayburn, Kewanee, has decided to go to the West for the benefit of his health.——Dr. John J. Rigg, Mount Pulaski, will leave in a short time for Europe.

Chicago.

Personal.—Dr. Frank Billings and daughter returned from Europe April 18.——Dr. L. Harrison Mettler has resigned from the faculty of the Chicago Clinical School.

City Physician Reports.—Dr. Joseph F. Todd, city physician, has submitted a report of the work of his department for the fiscal year. There were 2,705 visits and inspections made, 87 of which were for alcoholism. Aid was rendered to 104 injured persons.

Visiting Nurses.—The annual report of the secretary of the Visiting Nurses' Association of Chicago shows that the year has been successful. A number of bequests have been received and the association aided in the establishment of the Edwards Tuberculosis Fresh Air Sanatorium at Naperville. A central home for the nurses is now being considered.

Iroquois Memorial Hospital Plans.—The committee of the Iroquois Memorial Hospital Association has outlined to the president of the Cook County board the plan of the association for a memorial emergency hospital in the downtown district. The committee proposes to lease the ground at 43 and 45 La Salle Street at an annual rental of $5,000 and to erect thereon a three-story building to cost about $30,000. The county is asked to pay for the lease of the land and the hospital association will pay for the building.

Reduced Death Rate.—During the week ended April 20, 100 fewer deaths were reported than during the preceding week. The deaths for the week numbered 617, equivalent to an annual death rate of 15.26 per 1,000. Pneumonia still headed the death list with 103, followed by consumption with 81, heart diseases with 50, Bright's disease with 47, acute intestinal diseases with 42, violence (including suicide) with 28, and cancer with 27. Of the communicable diseases diphtheria caused 12 deaths; scarlet fever and whooping-cough, each 11; measles, 7; typhoid fever, 4, and influenza, 3.

INDIANA.

Gives Hospital Site.—Dr. George W. Bence, Greencastle, has offered to the Putnam County Hospital Association a building site for a hospital on the condition that the hospital shall bear his name; that it shall be used for hospital purposes only; that it shall be used only by regular practitioners, and that the association shall raise a fund sufficient for its erection and maintenance.

Personal.—Dr. Nelson D. Brayton, Indianapolis, one of the physicians in the employ of the Isthmian Canal Commission, has returned to his duty in Panama, after a vacation in Ecuador and the Columbian republic.——Dr. Lyman T. Rawles, Huntertown, was shot and seriously injured in the doorway of his home by a man believed to be insane.——Dr. T. Henry

Davis, Richmond, has resigned as a member of the State Board of Health, to take effect May 1.

March Mortality and Morbidity.—The deaths for March amounted to 3,502, or 272 more than were reported in March, 1906. During the month measles was prevalent in 82 of the 92 counties of the state, and 15 deaths were reported. Influenza was still more prevalent, 204 deaths being reported, while only 46 deaths were reported in the corresponding week of 1906. The order of prevalence of diseases was as follows: Influenza, tonsillitis, rheumatism, measles, pneumonia, bronchitis, diphtheria, scarlet fever, pleuritis, intermittent and remittent fever, typhoid fever, diarrhea, smallpox, whooping-cough, inflammation of the bowels, erysipelas, dysentery, typho-malarial fever, cerebrospinal meningitis, puerperal fever, cholera morbus and cholera infantum. The deaths from pneumonia numbered 575, or 166 more than for the corresponding month of last year. There was an increase also of 6 deaths from cancer and 54 from violence. Tuberculosis caused 431 deaths. Smallpox was reported from 20 counties with no deaths; in the corresponding month of last year 97 cases were reported from 11 counties, with no deaths. There were 210 cases of typhoid fever reported, with 40 deaths, from 33 counties; in the corresponding month of last year there were 211 cases, with 34 deaths, from 62 counties.

KANSAS.

Addition to Medical College.—An addition is proposed to the medical building of Kansas University at Rosedale, to cost $45,000.

State Society Meeting.—The annual meeting of the Kansas Medical Society will be held on the third floor of the Banking Trust building, Seventh Street and Minnesota Avenue, Kansas City, Kan., March 7 to 9.

Personal.—Dr. John C. Rudolph, Lawrence, has been appointed health officer of Douglas County, vice Dr. Hiram T. Jones, resigned.——The following health officers of Salina County have been appointed: Drs. Howard N. Moses, Salina; Louis O. Nordstrom, Assaria; Enos R. Cheney, Gypsum, and Wilber E. Fowler, Brookville.——Dr. Josiah P. Lewis, Topeka, is seriously ill at his home.

College Graduation.—The class of 1907, numbering 15, was graduated April 11 from the Kansas Medical College. Dr. H. B. Ward, Lincoln, Neb., dean of the College of Medicine of the University of Nebraska, delivered the general address, and Theodore W. Peers the faculty address. Dr. William L. Lindsay, dean of the college, was master of ceremonies, and the diplomas were presented by the president of the institution.

KENTUCKY.

Epidemic of Meningitis.—It is reported that 20 more deaths from cerebrospinal meningitis have occurred in Harlan County during the last month.

Library Donated.—Dr Joseph M. Mathews, Louisville, has donated his personal medical library, consisting of 800 volumes, to the local public library.

Personal.—It is announced that the resignation of Dr. James W. Hill, superintendent of the Institution for the Education of Feeble-Minded Children, Frankfort, has been received and accepted by the state board of control. Dr. Louis H. Mulligan, assistant superintendent of the Eastern Kentucky Asylum for the Insane, has been called to Frankfort by the state board of control to take charge of the institution until a superintendent can be elected.——Dr. David T. Stuart, Paducah, has arrived in Shanghai.——Dr. William A. Keller, Louisville, city physician for the West End, is reported to be critically ill at his home with typhoid fever.

LOUISIANA.

War on Mosquitoes.—The New Orleans city board of health has begun an investigation of mosquitoes, not the *Stegomyia calopus*, but the ordinary mosquitoes, which are a source of discomfort during the entire year, and their extermination has been systematically planned.

Medical Department of State University.—At a meeting of the executive committee of the board of supervisors of the Louisiana State University it was announced that progress had been made and that the medical department would be inaugurated in New Orleans this fall under most favorable circumstances.

Havoc Wrought by Cyclone.—The cyclone which swept over the Gulf states April 6 wrecked several buildings of the Louisiana Insane Asylum, Jackson. The damage to the institution was about $100,000 and four female patients were killed. The governor of the state immediately sent tents and cots for the temporary housing of the inmates of the asylum, and measures have been taken for rebuilding.

Personal.—The office of Dr. Mark L. Johnson, Hackley, was burned to the ground, with a loss of $1,100 and no insurance.——Dr. James M. Batchelor, house surgeon at Charity Hospital, and Dr. Waldemar T. Richards, New Orleans, were severely injured in an automobile accident, March 30.——Drs. C. Milo Brady, New Orleans, medical inspector for the State Board of Health, and Henry A. Veazie, shipping inspector for New Orleans, have concluded their service for the state. Dr. Brady will enter on private practice and Dr. Veazie has been appointed to the U. S. P. H. and M.-H. Service.

Sanitary Conference.—A conference of the parish and municipal health officers has been called for May 2, 3 and 4 at Opelousas, under the auspices of the Louisiana State Board of Health, to consider important questions of public health and hygiene. One of the most important matters to come before the conference is the outlining of a bill to be presented before the next legislature, giving parish health officers reasonable authority and fair compensation. In addition to health officers the commercial bodies of the state and women's clubs have been invited to send delegates to the conference.

MAINE.

Grenfell in Portland.—Dr. Wilfred Grenfell spoke on his mission to the deep sea fishermen of Labrador, at St. Luke's Cathedral, Portland, April 14.

Personal.—Dr. G. Gilmore Weld was inaugurated as mayor of Old Town, March 25.——Dr. Walter L. Hunt, Bangor, has succeeded to the practice of Dr. Frederick W. Mitchell, Island Falls. Dr. Mitchell, after pursuing postgraduate work in Baltimore, will locate in Houlton.

Contagious Diseases.—It is reported that diphtheria is prevalent in the Capsuptic and Rangeley Lake regions. Many lumber camps are in quarantine. The Franklin County Board of Health is cooperating with the State Board of Health to check the spread of the disease.——At Westbrook 25 cases of scarlet fever have been reported to the board of health, and on this account the public schools have been closed.

MASSACHUSETTS.

Feeble-Minded Institution Site Bought.—Valuable properties in the town of Wrenham have been purchased by the state for the establishment of an institution for the feeble-minded. About 500 acres have been secured.

Bill to Lower Milk Standard Defeated.—A bill introduced into the senate to lower the standard of the milk supply in the state was defeated. Dr. Charles Harrington, Boston, secretary of the State Board of Health, opposed the bill.

Personal.—Dr. Henry William Miller, Taunton, has been made psychopathologist in the Cook County Institutions, Dunning, Ill.——Dr. S. Alphonse Daudelin, who sailed for Europe on *La Savoie*, April 18, was given a dinner at Worcester, April 16, in honor of his appointment as high commissioner to the Maratime Exposition, Bordeaux, France.

Management Approved.—The investigation of the State Hospital for Dipsomaniacs, Foxboro, has resulted in a report by the governor's executive council, approving the management. It is advised, however, that an age limit should be established and that there should be a separate institution for the care of hopeless inebriates without criminal records. With these two changes, the present institution will be much more efficient in accomplishing the purposes for which it was established.

MINNESOTA.

Few County Health Boards.—Dr. Henry M. Bracken, secretary of the State Board of Health, states that only 30 out of the 85 counties in Minnesota have appointed county boards of health, as required by law.

Proposed Fund for Sanatorium.—A request is to be made to the legislature at this session for the creation of a fund of $50,000, to be used for the maintenance of the State Sanatorium for Consumptives, near Walker. One wing of the main building is nearly completed and about 25 acres of land, on which cottages may be constructed, have been cleared. The building already erected is almost ready for occupancy at a cost of more than $60,000.

Personal.—Dr. and Mrs. Charles P. Robbins, Winona, have returned after eight months abroad.——Dr. O. Edward Linjer has been elected city physician of Minneapolis, vice Dr. Emil H. Beckman, resigned.——Dr. Charles Malchow, Minneapolis, imprisoned on a charge of sending improper literature through the mails, was released from the state penitentiary, March 30.——Dr. John B. Dunn has been elected chairman of the

board of health of St. Cloud.——Dr. Thomas H. Wimer, Marshall, is reported to be critically ill.——Dr. Adolph O. Bjelland has been appointed health officer of Mankato.

MISSOURI.

Brown Gets Loving-Cup.—On April 11 the staff of the St. Louis City Hospital presented a silver loving-cup to Dr. John Young Brown, who recently resigned from the superintendency.

Hydrophobia Ward Opened.—The hydrophobia ward of the St. Louis City Hospital was opened April 12. St. Louis is now thoroughly equipped for treating patients afflicted with rabies.

Smallpox.—Five cases of smallpox have occurred at the Young Women's Christian Association boarding-house, Kansas City.——The health officer of Greene County reports 25 cases of smallpox at Republic.

Senior Student Dies.—Joseph H. Magana, a native of Mexico and a senior student at the St. Louis College of Physicians and Surgeons, died at Jefferson Hospital in that city, April 4, after an operation for appendicitis.

Tuberculosis Prevention.—The St. Louis Society for the Prevention of Tuberculosis has been incorporated with the aim of disseminating, by means of lectures and literature, information concerning tuberculosis, how it spreads and how it may be combated. The association expects to formulate plans for a tent sanitarium for the treatment of tuberculosis.

Physician Fined.—Dr. F. W. Lanoix, Kansas City, was fined $25 April 14, on the charge of practicing medicine without a license. A complaint was made that he had entered into the practice of medicine and surgery in the city without having filed a copy of his certificate with the State Board of Health, and that he was not authorized by the board to practice medicine and surgery.

Personal.—Dr. Emmett P. North has been appointed to succeed the late Dr. Augustus Von Liew Brokaw as superintendent of the United Street Railways Company, St. Louis.——Dr. Edmund A. Donelan, St. Joseph, for several years president of the board of education, has been re-elected medical supervisor of public schools by the board.——Dr. John F. Chandler, Forest City, has been elected secretary of the Holt County Medical Society, vice Dr. Samuel W. Aiken, Oregon, removed from the county.

MONTANA.

State Board Election.—The newly formed State Board of Health met in Helena, perfected its organization and elected Dr. William Treacy, Helena, president, and Dr. Thomas D. Tuttle, Billings, secretary.

Personal.—Dr. William T. Scott, Great Falls, has resigned as secretary of the Cascade Medical Society, and has gone to Europe.——Dr. Robert L. Stokes, Lewiston, has moved to Washington, D. C.——Dr. Thomas H. Pleasants, Lewiston, formerly of Helena, is reported to be dangerously ill with pneumonia in Chicago.

Elections.—The Silver Bow County Medical Society, at its annual meeting held in Butte, elected the following officers: President, Dr. Josiah S. Hammond; vice-president, Dr. Creswell T. Pigot; secretary, Dr. Grace W. Cahoon; treasurer, Dr. McCormick Smetters; and executive committee, Drs. Josiah S. Hammond, Laura L. Keisker, Richard C. Monahan and Thos. J. Murray, all of Butte.——The Madison County Medical Society, at its annual meeting, held in Virginia City April 5, elected Dr. Gay F. Tidyman, Ennis, president; Dr. Emer L. Sutherland, Sheridan, vice-president; Dr. Edgar I. Bradley, Virginia City, secretary-treasurer, and Drs. Tidyman and Bradley delegates to the State Medical Association.

NEBRASKA.

Bill for Tuberculosis Hospital Passed.—A bill introduced by Representative Howard, providing for the establishment of a tuberculosis hospital at Hastings, and appropriating $25,000 to pay for the site and construction, has passed the House of Representatives.

Personal.—Dr. Joseph W. Bourne, South Auburn, has been appointed physician for the west half of Nehama County, including Auburn, and Dr. W. W. Frazier, Nehama, physician for the east half of the county, including the poor farm.——Dr. Allen T. Hill, Lyons, while making a professional call, was attacked by highwaymen and lost $15 and a hypodermic syringe.

Official Organ of State Society.—The *Western Medical Review*, recently transferred from Lincoln to Omaha, has been made the official organ of the state medical society. At a meeting, April 11, the following directors were elected: Drs. August F. Jonas, Frank E. Coulter, Henry L. Akin, Henry L. Burrell, and George H. Bicknell. On the following day the board of directors met and elected Dr. August F. Jones, president; Dr. Henry L. Akin, secretary, and Dr. Archibald L. Muirhead, editor.

NEVADA.

Personal.—Dr. John A. Ascher, Sparks, has been appointed physician of Washoe County.——Dr. William L. Berry, Carson City, has been re-elected physician of the Nevada state prison.

Hospital Notes.—The local Catholic parish of Reno will undertake the construction of a hospital, to be placed in charge of the Dominican Sisters, and to cost $70,000.——The Miners' Union, Wonder, has started a movement toward the erection of a hospital in the camp.

NEW HAMPSHIRE.

Loss by Fire.—A recent fire at Newport destroyed the house of Dr. J. Leavitt Cain, with a loss of more than $4,000.

Epidemic of Influenza.—The physicians of Nashua report that there are at least 200 cases of influenza, affecting especially the eyes, in Nashua and vicinity.

New Hospital Building.—Laconia is to have a new hospital, the erection of which will be begun in a short time. The structure will be of brick with stone trimmings. The administration building will be the first to be erected.

College Graduation.—At the annual graduation of Dartmouth Medical School, Hanover, March 29, a class of 11 received diplomas. Dr. William H. Leith, Lancaster, delivered the address to the graduates and diplomas were presented by Dr. William T. Smith, Hanover, dean of the medical school.

NEW YORK.

New District Society Organized.—The Fifth District Branch of the State Medical Society has just been organized, including the counties of Oswego, Onondaga, Lewis, Oneida, Herkimer and Jefferson. The first meeting will be held in October.

Academy Anniversary.—The fifty-fifth anniversary of the Elmira Academy of Medicine was celebrated by a dinner at the Elmira City Club, April 4. Dr. Charles H. Frazier, dean of the Medical Department of the University of Pennsylvania, read a paper on "Surgical Complications in Typhoid which Affect the Abdominal Viscera."

Personal.—Dr. Charles W. Pilgrim, Poughkeepsie, has decided to retain the position of president of the State Board of Lunacy Commissioners.——Dr. Henry W. Carpenter, for 55 years a practitioner of Oneida, suffered a cerebral hemorrhage recently.——Dr. Edward H. Hutton, Corning, is seriously ill at the Corning Hospital with pneumonia.

Deaths from Respiratory Diseases.—This class of diseases was mainly responsible for an increase in the February death rate. The death rate was 18.8 per 1,000 for the month of February, compared with 18 for the same month last year. In the entire state there was a decrease of 228 deaths from pneumonia as compared with February, 1906, but an increase of 974 from other acute respiratory diseases. In New York City there were 463 fewer deaths from pneumonia, but an increase of 668 from other acute respiratory diseases. The mortality from influenza was also high, 618 deaths being recorded from this cause. There was also a slight increase in the number of deaths from these diseases during February as compared with January. Deaths from external causes increased from 548 in February, 1906, to 715 in February, 1907.

Matters Before the Legislature.—Representatives of humane societies have made a strong appeal for a favorable report on the Francis bill, which restricts vivisection to such experiments as shall be performed under the supervision of the state. A delegation of New York surgeons appeared in opposition to the bill. They argued that the bill might bring about experimentation on human beings and check the advance of science. Such a bill would close the laboratories in the medical colleges and discourage surgery.——After a debate characterized by considerable bitterness, the senate on April 18, advanced to the order of final passage the public health committee's bill substituting a single medical examining board for the three boards now representing the allopathic, homeopathic and eclectic schools of medicine. Dr. D. B. St. John Roosa says in regard to the passage of this bill through the senate, that a ridiculous climax in medical legislation is evidently near. The following paragraphs have crept into the bill somewhere along its course:

> Where the application be for a license to practice osteopathy, the applicant shall produce evidence that he has studied osteopathy not less than three years, including three satisfactory courses of not less than nine months in three different calendar years, in a college of osteopathy maintaining at the time a standard satisfac-

tory to the regents. After 1910 the applicant for a license to practice under this act shall produce evidence that he has studied not less than four years, including four satisfactory courses of not less than seven months each in four different calendar years, in a college maintaining at the time a standard satisfactory to the regents.

It is further provided that any person who shall be actively engaged in the practice of osteopathy in the State of New York on the date of the passage of this act and who is a graduate in good standing of a school or college of osteopathy within the United States which at the time of his or her graduation required a course of study of two years or longer, including the subjects of anatomy, physiology, pathology, hygiene, chemistry, obstetrics, diagnosis and the theory and practice of osteopathy, with actual attendance of not less than twenty months, which facts shall be shown by his or her diploma and affidavit, shall, on application and payment of $10.00, be granted, without examination, a license to practice osteopathy, provided application for such license be made within six months after the passage of this act. A license to practice osteopathy shall not permit the holder thereof to administer drugs or perform surgery with a knife. Licenses to practice osteopathy shall be recorded in accordance with the provisions of this act, and the word osteopath shall be included in such registration, and such license shall entitle the holder thereof to the use of the degree D.O., or doctor of osteopathy.

The New York milk committee and the committee on the prevention of tuberculosis of the charity organization have decided to cooperate in seeking to get a law passed this session to stamp out tuberculosis in the cattle of the state. It is thought that with not less than $200,000 to be spent by the state department of agriculture in testing and condemning cattle, a long step would be taken in securing milk free from tuberculosis germs. A bill to increase the compensation to be paid to farmers for condemned cattle has led the committee to believe that some law can be passed providing for a strict quarantine on all cattle coming into the state and that all cattle shall be tuberculin tested. The proposed bill, in addition to this, would forbid the sale of all milk handled by a person having an infectious disease and would make it illegal for any one who has been exposed to such disease to be employed in a dairy farm until such person had received a clean bill of health from the local health authorities.

New York City.

Personal.—Dr. Charles H. Peck, the senior attending surgeon to the French Hospital of this city, has recently received from the French government through the minister of public instruction and fine arts the decoration of "Officier de l'Instruction Publique."

Object to Tuberculosis Hospital.—The taxpayers of Richmond, Staten Island, have asked for a permanent instead of the temporary injunction obtained last December, restraining the charities commissioner from building a tuberculosis sanitarium on Staten Island.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended April 13, 469 cases of measles, with 6 deaths; 466 cases of tuberculosis, with 200 deaths; 438 cases of scarlet fever, with 14 deaths; 341 cases of diphtheria, with 39 deaths; 80 cases of typhoid fever, with 8 deaths; 55 cases of whooping-cough, with 7 deaths; 17 cases of cerebrospinal meningitis, with 15 deaths; 69 cases of varicella and one case of smallpox, a total of 1,936 cases and 289 deaths.

Contagious Diseases and the Bellevue Staff.—The records of Bellevue Hospital for the past three months show that six members of the house staff have been stricken with diphtheria, three with scarlet fever and one with blood poisoning, which may result in the loss of a finger. During the same time 13 nurses have been stricken with diphtheria or scarlet fever while on duty. This would indicate that the hospital interne in New York takes more risk of death than a fireman, and more chances in one day than a policeman takes in a year.

Hospital Conference.—The annual hospital conference of the City of New York was held April 24 at the Academy of Medicine. Dr. S. S. Goldwater gave an address on "Dispensary Ideals, with the Plan for a Dispensary Reform Through the Adoption of Restricted Numbers." The address dealt with the literature of dispensary abuse; the New York dispensary law; the newer dispensary ideals; the work of dispensary nursing association; the district work of New York dispensaries; the opinions of prominent dispensary workers and the author's own proposed program.

City Has Low Death Rate.—The lowest death rate for the year was reported for the week ended April 13. It was 18.47 per 1,000, or 1,517 deaths, as compared with 20.35 per 1,000, or 1,620 deaths for the corresponding week of last year. The highest number of deaths thus far this year was for the week ended January 5, when there were 1,721 deaths. The number of deaths from typhoid fever for last week was 8, as compared with 10 in the corresponding week of last year. The number of cases reported last week was 81, which is encouraging as compared with the 120 cases reported two weeks previously.

Anniversary of German Dispensary.—On the occasion of the fiftieth anniversary of the German Dispensary, Dr. Charles H. Jaeger founded three prizes, to be known as the Marie Jaeger Memorial Prizes. The prizes are for medical essays and are of $100, $75 and $50, respectively. The competition is to be open to members and collaborators of the German Dispensary and to members of the house staff of the hospital. The prizes are to be awarded December 31 of each year. The essays are to be based on cases occurring in the service of the hospital and dispensary. The object is to stimulate research and promote scientific study.

Watershed Dangers.—The department of health has given out the report of a conference at which Dr. Darlington, health commissioner; John H. O'Brien, the water commissioner, and Dr. Eugene H. Porter, state health commissioner, were present to consider conditions existing at Mount Kisco and Katonah, on the Croton watershed, which have been threatening the pollution of the water supply of this city. The report says that the State Department of Health has been endeavoring to have a sewer system constructed at Mount Kisco. The village authorities maintained under the law that New York City should pay for the sewer system and sewer disposal. The corporation counsel of New York City has advised that this city is not liable. The matter has been placed in the hands of the attorney-general, who will shortly render an opinion. Commissioner Porter has written Dr. Darlington urging the construction of a filtration plant as being the safe way in which the water supply can be protected. Experiments in infiltration are being made, as it is estimated that a plant will cost the city $10,000,000, which is more than well can be afforded unless it is assured that the plan adopted will be entirely satisfactory.

OHIO.

Joint Commencement.—On May 8 the sixtieth anniversary of Starling Medical College will be celebrated. At this time the joint commencement of the newly combined Starling Medical College and Ohio State University will be held. Seventy-two applicants for degrees will be presented.

Lectures on Nervous and Mental Diseases.—Dr. Frank W. Harmon, superintendent of Longview Hospital for the Insane, Carthage, has instituted a course of lectures from the immense mass of material on nervous and mental diseases collected in the institutions. These lectures, delivered on Mondays from 4 to 5 p. m., are by Dr. Philip Zenner, Frank W. Langdon, Herman H. Hoppe and David I. Wolfstein. The lectures are free and are intended for practitioners and senior students.

In the Hands of the Law.—"Dr." T. P. Hanley, Kinsman, arrested for practicing medicine without a license, was found guilty and fined $200 and costs.——Dr. James G. Ambrose, Dayton, charged with performing a criminal operation, is reported to have been found guilty and released on bail, pending the disposition of a motion for a new trial.——"Dr." C. R. Greiner of Toledo, charged with practicing medicine without a license, is said to have been found guilty. He has taken an appeal.

Personal.—Dr. A. W. Foertmeyer has been appointed resident physician to the Cincinnati City Hospital.——Dr. Samuel S. Wilson, Xenia, has returned from Europe.——Dr. J. Thomas Elliott, East Liverpool, goes to Johns Hopkins University for two years postgraduate work, June 1.——Dr. Oliver H. Pinney, Norwood, will leave for Assonat, Central Africa, about the 1st of June.——Dr. Adam B. Howard, formerly superintendent of the Cleveland City Hospital, will leave April 29 for a trip to Great Britain.——Dr. Frank McCafferty, Columbus, has been appointed a member of the local board of public safety.——Dr. Harry E. Welch, health officer of Youngstown, is seriously ill with septicemia.

PENNSYLVANIA.

Decrease of Typhoid.—Superintendent Edwards of the Pittsburg Bureau of Health, reports that during March 144 cases of typhoid were reported, while during March, 1906, more than 400 cases occurred.

Bills Passed.—On April 17 the senate passed the bill legalizing the practice of osteopathy in the state, providing for a State Board of Osteopathic Examiners, and allowing them a member in the State Medical Council. On the same day the Senate Appropriations Committee reported favorably the bill appropriating $20,000 to the York Hospital.

Expenditure for State Hospital.—At a special meeting of the Board of Trustees of the State Hospital for the Insane, Norristown, held April 19, it was decided to expend the

$412,000 appropriated by the legislature as follows: Home for men nurses, $75,000; convalescent home for men, $60,000; chapel and amusement, $50,000; bard extension and storage house, $15,000; two ward buildings, $200,000, and enlargement of refectories, $30,000.

Personal.—Dr. Martha S. Everitt has removed from Scranton to York.——Dr. Jonathan L. Forwood, Chester, completed his first half century of practice of medicine and was the guest of honor at a banquet at the Keystone Club in that city April 8.——Dr. Milton A. Hengst has been elected president and treasurer of the Birdsboro Board of Health.——Dr. John W. Beck, Peckville, who has been seriously ill with peritonitis, is reported to be convalescent.——Dr. B. H. Warren, state dairy and food commissioner, has resigned.——Dr. William T. English, Pittsburg, has returned from an extended tour in the South.——Dr. Joseph K. Weaver, Norristown, surgeon general of Pennsylvania, was recently presented with a loving-cup by the officers and teachers of the Baptist Sunday School, of which he has been superintendent for 25 years.——Dr. Charles W. McConnell, Altoona, is seriously ill as the result of a shock from a heavy current of electricity, April 6.——Dr. Henry H. Riegel, Catasauqua, will finish half a century of practice of medicine early next month.——Dr. Frederick H. Evans, Chester, has been elected advisory physician of the Eddystone Board of Health.——Dr. Samuel G. Dixon, State Health Commissioner, Harrisburg, has been elected honorary member of the Academy of Physics and Chemistry, Palermo, Italy, and has been awarded a medal of the first class for scientific and humanitarian merit.

Philadelphia.

School of Anatomy Competition.—On April 15, Dr. W. Wallace Fritz announced the result of the competitive examination of the Philadelphia School of Anatomy. The best thesis was presented by Dr. James F. Kelly of Bridgeport, Conn., who received as a prize a case of surgical instruments.

Reception to Gilder.—A reception was given by the Medical Club of Philadelphia, April 19, to Richard Watson Gilder, who made a short address, in which he urged the establishment of an institute for the investigation of faith cure and other treatments not recognized by the medical profession.

Presentation to Resident Physician.—The physicians and nurses of the University Hospital gave an informal dinner to Dr. George Morris Piersoll, chief resident of the hospital, April 19. On April 20 he completed his two years' service and a silver loving cup was given him as a testimonial.

Donation of Land to Hospital.—Mr. Felix Isman has donated to the Jewish Hospital Association a triangular piece of ground at the corner of Tenth Street and Clarkson Avenue adjoining the property owned by the hospital. This conveyance enables the Hospital Association to square the lines of the property which it owns.

Personal.—Dr. Frank H. Getchell, prominent in medical circles for many years, is reported to be critically ill as the result of a fall on ice-coated steps five weeks ago.——Dr. J. William White has been selected by the directors of the Pennsylvania System as advisory surgeon for the company. He will have the general supervision of the medical department of the system and its hospitals and equipment will be organized in accordance with his views.——Dr. John H. Gibbon has been elected associate professor of surgery in Jefferson Medical College, vice Dr. John Hill Brinton, deceased.

Society to Support Dispensary.—At a meeting held April 16 a new society was formed whose object is to solicit funds for the support of the Southeastern Dispensary of the University of Pennsylvania. Dr. Barton Cooke Hirst, who as professor of obstetrics is, by arrangement, honorary president of the society and the active chairman of the board of directors, presided. An appeal is made to the Alumni and friends of the university to support this project, aside from further increasing the efficiency of the obstetrical department and the benefit to medical students. The inhabitants of the southeastern section of the city are most deserving poor, and the dispensary has been of great service to them.

Cerebrospinal Meningitis.—On April 14 Dr. Jay F. Schamberg addressed the medical inspectors of the Bureau of Health on measures to be taken to detect cases of spinal meningitis and to prevent the spread of the disease. Dr. Schamberg declared there is no need for public alarm over the number of cases of spinal meningitis. He regards it as unlikely that the present ratio of cases will keep up. In the week ended April 20 there were 36 new cases of cerebrospinal meningitis reported to the Bureau of Health. This is an increase of 8 over the number reported for the previous week. Director Clay of the Department of Public Safety has issued orders to flush the streets in the districts where the disease exists.

Semi-Centennial of Society.—The Pathological Society of Philadelphia, one of the oldest, if not the oldest of its kind in America, will celebrate its semi-centennial May 10 and 11. On the first day addresses will be delivered by Dr. Frederick G. Novy, Ann Arbor, on "The Rôle of Protozoa in Pathology;" by Dr. Simon Flexner, Rockefeller Institute, New York, on "The Newer Pathology;" and by Dr. Alonzo E. Taylor of the University of California, San Francisco, on "The Dynamic Point of View in Pathology." In the afternoon a commemorative meeting will be held in the Pennsylvania Hospital, where the first meeting of the society took place in 1857. At this session Dr. William Osler, Regius Professor of Medicine in Oxford University, will deliver an address on "Pathology and Practice." A dinner will be given in the evening, and the next day will be devoted to an exhibition meeting of interest to pathologists, clinicians and surgeons.

GENERAL.

Carroll Made Doctor of Laws.—The Board of Regents of the University of Nebraska has recommended that the degree of Doctor of Laws be conferred on Major James Carroll, surgeon, U. S. Army, at the annual commencement exercises in June.

Data on Diet and Endurance Wanted.—Prof. Irving Fisher of Yale University desires us to announce that he is engaged in collecting all available statistics and facts bearing on the question of diet in relation to endurance. Physicians who have had experience with more than one system of diet, whether personally or through patients, are invited to address him at 460 Prospect Street, New Haven, Conn. He will then submit definite questions.

Railway Surgeons Meet.—At the annual meeting of the physicians of the Cotton Belt Railway System, held in Texarkana, Texas, April 8, the following officers were elected: President, Dr. C. M. Ludlow, Lillsboro, Texas; vice-presidents, Drs. William H. Blythe, Mount Pleasant, Texas; Amos W. Troupe, Pine Bluff, Ark., J. W. Beall, Malden, Mo., and Oscar Dowling, Shreveport, La; and secretary-treasurer, Dr. H. H. Smiley, Texarkana, Texas.

Control of Typhoid Fever in the Army.—Medical officers of the Army have become more and more impressed each year with the importance of contact infection as a means of spread of typhoid fever among troops. This fact was clearly shown in the report of the typhoid-fever board of 1898. Of 1,608 cases which they were able to definitely locate in particular tents, 62.80 per cent. were connectable directly or indirectly. Of recent years the attention of medical officers has been frequently called to the importance of the patient as the source of infection, and recently they have been instructed that for practical purposes the disease must be considered contagious and patients affected with it isolated as far as practicable in separate wards. This point, together with early recognition and careful attention to detail in the disinfection of all discharges as they leave the patient, are emphasized in the directions for the control of the disease.

Education Conference.—The third annual conference of the Council on Medical Education of the American Medical Association will be held in the Auditorium Hotel, Chicago, Monday, April 29, 1907. Committees will report on the advisability of allowing a year's advanced standing in the medical school to graduates of colleges of arts and sciences, and also on details as to the requirement, in addition to a four-year high school education, of a year to be devoted to physics, chemistry, biology and one language, as a prerequisite to the study of medicine. The following papers are also announced:

Conditions Controlling General and Medical Education in the South. Chancellor J. H. Kirkland, of Vanderbilt University, Nashville, Tenn.

Inspection of Preliminary Credentials by an Officer of the State Examining Board. Dr. Dudley Tait, President California State Examining Board, San Francisco.

What Constitutes a Reputable Medical College? Dr. Howard J. Rogers, First Assistant Commissioner of Education, Albany, N. Y.

Methods of Conducting the State Board Examinations. Dr. Beverly D. Harison, Secretary Michigan State Board of Registration, Detroit.

A Plea for a Licensure Examination in Two Parts. Dr. W. T. Means, Chairman Judicial Council, Association of American Medical Colleges.

National Health Department.—Steps have been taken by the Committee of One Hundred, appointed last June by the American Association for the Advancement of Science, toward stirring up the public sentiment in favor of federal supervision of the public health, either through a new department or through a bureau in the department already existing. Twenty members were present at a recent meeting, and an executive committee was named which will

be vested with the prosecution of the movement. Other meetings will soon be held and local committees to cooperate with the central committee will be named. If this scheme is successful it will include bureaus on infant hygiene, school sanitation, pure food, registration of physicians, drugs, druggists and drug manufacturers, and on public and private institutions of correction, detention and residence. There would also be a bureau of national sewage and one of organic disease.

Tuberculosis Association to Meet.—The third annual meeting of the National Association for the Study and Prevention of Tuberculosis will be held at the New Willard Hotel, Washington, D. C., May 6 to 8, 1907. The secretary is Mr. Livingston Farrand, 105 East Twenty-second Street, New York. The general meeting will open at 11:30 a. m., Monday, with an address by the president, Dr. Herman M. Biggs. Dr. Lawrence F. Flick will make a report on the International Congress on Tuberculosis, 1908. In the evening Dr. Herman M. Biggs will speak on "Compulsory Notification and Registration on Tuberculosis." Discussion will follow. On Tuesday evening Mr. Livingston Farrand will make an address on "The Campaign Against Tuberculosis in the United States." The Sociological Section, of which Paul Kennaday, New York, is chairman, and Christopher Easton, Mt. Vernon, N. Y., secretary, will meet Monday at 4 p. m. and Tuesday at 11 a. m. The subjects announced are:

Tuberculosis Classes and Day Camps, Dr. Joseph H. Pratt, Boston.
Country Treatment of City Cases, Dr. B. H. Waters, New York.
A Working Program for a Small City, Dr. Oscar H. Rogers, Yonkers, N. Y.
Schools and Tuberculosis, Dr. John H. Lowman, Cleveland.
Factory Inspection for Tuberculosis, Dr. Frank T. Fulton, Providence.

The Clinical and Climatological Section, of which Dr. George Dock, Ann Arbor, Mich., is chairman, and Dr. Joseph Walsh, Philadelphia, secretary, will meet Tuesday at 4 p. m. and Wednesday at 11:30 a. m. In addition to the reports of the committees on clinical nomenclature, medication and mixed infection, the following papers are announced:

Some Experience with Tuberculin, L. Rosenberg, Bedford Station, N. Y.
The Varieties of Tuberculosis, Dr. Woods Hutchinson, Redlands, Cal.
Phagocytosis, etc., in Sputum as a Measure of Resistance in Tuberculosis, Dr. Albert H. Allen, Saranac Lake, N. Y.
Examination of Feces as a Means of Diagnosis in Tuberculosis, Dr. Myer Solis-Cohen, Philadelphia.

The Pathological and Bacteriological Section, of which Dr. Frank F. Wesbrook, Minneapolis, is chairman, and Dr. S. Marx White, Minneapolis, is secretary, will meet Tuesday at 11 a. m. and Wednesday at 9:30 a. m. The following subjects are announced:

Split Products of the Tubercle Bacillus and Their Effects on Animals, Dr. Victor C. Vaughan, Ann Arbor.
Further Notes on the Technic of the Tuberculo-Opsonic Test, Drs. Hugh M. Kinghorn and David C. Twichell, Saranac Lake, N. Y.
Homologous Bacteria as a Vaccine in Tuberculosis (Preliminary Report), Dr. Albert H. Allen, Saranac Lake, N. Y.
Report from the Rockefeller Institute, Dr. Simon Flexner, New York.
The Pleura, Dr. W. B. Stanton, Philadelphia.
Acute Miliary Tuberculosis without Tubercle Formation, Dr. A. S. Warthin, Ann Arbor.
The Blood in Tuberculosis, Dr. Frank A. Craig, Philadelphia.
Occult Blood Findings in Tuberculosis, Dr. H. R. M. Landis, Philadelphia.

The Section on Tuberculosis in Children, of which Dr. Thomas M. Rotch, Boston, is chairman, and Dr. Samuel S. Adams, Washington, secretary, will meet Monday at 2 p. m. The following papers are announced:

The Living Pathology of Tuberculosis of the Bones in Early Life, Dr. Thomas Morgan Rotch, Boston.
Recent Advances in the Knowledge of Tuberculosis in Children, Dr. Charles Hunter Dunn, Boston.
The Present Status of the Transmissibility of Bovine Tuberculosis as Illustrated by Infants and Young Children, Dr. Henry L. K. Shaw, Albany.
Tuberculosis of the Cervical Nodes and Infections from the Tonsils, Dr. Fred. T. Murphy, Boston.
Are Tuberculous Infants and Children in the First Five Years of Life Liable to be Sources of Infection? Dr. Samuel S. Adams, Washington.

The Surgical Section, of which Dr. William S. Halsted, Baltimore, is chairman, and Dr. Hugh H. Young, Baltimore, secretary, will meet Tuesday, May 7, at 9:30 a. m. The following papers are announced:

Present Status of the Opsonic Theory and the Treatment by Tuberculins, Dr. Rufus I. Cole, Baltimore.
The Treatment of Bone and Joint Tuberculosis by "Stauung's-Hyperemie," Dr. Schmieden, Bonn, Germany.
The Use of the X-Ray in the Treatment of Certain Forms of Tuberculosis, Dr. Henry K. Pancoast, Philadelphia.

FOREIGN.

International First-Aid Congress.—The German "Samariterbund" has called an international conference of all leaders in the matter of first-aid to the injured on sea and land. The congress will convene at Frankfurt a. M., in May, 1898. Mayor Adickes of Frankfurt is the chairman of the executive committee.

Institute for Puericulture as Memorial to Budin.—A committee has been formed in France to collect funds to found a practical school of puericulture to bear the name of P. Budin, an enlargement of his idea of "nursling consultations." Senator P. Strauss is chairman of the committee, and the publishing house of O. Doin & Co., 8 Place de l'Odéon, Paris, has been appointed treasurer of the fund.

Moebius Endowment.—The friends of the late P. J. Moebius of Leipsic, whose death was mentioned in THE JOURNAL on page 541, issue an appeal for subscriptions to endow a Moebius prize to perpetuate his name. The appeal is signed by Professor Ediger and others. Dr. Curt Reinhardt, Lessingstrasse, Leipsic, Germany, is the treasurer of the fund. The intention is to found an annual prize for the best work on neurology or psychiatry, one year to be given for original works sent in competition, the next year for the best work published anywhere during the preceding two years.

Approaching International Congress of Hygiene.—The Fourteenth International Congress of Hygiene is to be held at Berlin, September 23-29, as already announced. These congresses have been held in various countries, but this is the first time that Germany has been the host, and elaborate preparations are under way to add to the historic interest and practical benefits of the congress. The Imperial Board of Health is getting out a *Festschrift*, as also the Imperial Board of Statistics. The Prussian department of public instruction is also at work on a *Festschrift*, to be dedicated to the congress, and the city of Berlin is getting up a fourth.

International Medical Association for Suppression of War.—The annual meeting of this society, which has its headquarters at Paris, was held March 22, with the organizer and president of the association, Dr. J. A. Rivière, in the chair. Nine resolutions were adopted by the convention, among them one congratulating the president of the United States and the presidents of Mexico and Guatemala for their offer of arbitration to Honduras and Nicaragua, and congratulating the latter countries for their acceptance of the offer. Another resolution congratulated "le grand journaliste, Stead, pour sa superbe campagne pacifique auprès des gouvernants." The last resolution was a message of congratulation to Dr. Senolo-Murakamvi for his success in organinzing a "Peace Association" in Japan. The meeting is described in the *Progrès Méd.* for April 6.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, April 13, 1907.

Lord Lister's Eightieth Birthday.

Lord Lister celebrated his eightieth birthday at his residence, 12 Park Crescent, Portland Place. Many telegrams from all parts of London, the country and abroad reached him. His apartments were decorated with floral offerings from professional and private friends and admirers. To each bouquet was attached a card bearing a congratulatory message. He received several deputations, who presented addresses expressing high appreciation of his work. Dr. Charles Martin, president of the Lister Institute of Preventive Medicine, which was founded by Lord Lister and a few colleagues, presented a letter recording the decision to signalize the anniversary by republishing all his works. Lord Lister expressed himself greatly pleased by the compliment. Mr. Jonathan Hutchinson headed a deputation from the Royal College of Surgeons. Professor Tilanus of Amsterdam presented an address from the physicians of that city. Another address was presented by Dr. Madsen of Copenhagen bearing the signatures of 1,000 Danish doctors. Lord Lister briefly replied to all the congratulations and presentations, saying how greatly he felt honored by them. He enjoys excellent health, and may be seen daily talking walking exercise. He is a somewhat broadly set man, in quasi-clerical attire, with a strikingly leonine but kindly head.

The Manifesto on Alcohol.

As anticipated in a previous letter, the manifesto signed by fifteen of the most eminent members of the profession advocating the use of alcohol, has provoked a storm of contro-

versy in both the medical and the lay press. A counter declaration has been issued by the British Medical Temperance Association for advancing the practice of total abstinence. The main propositions in the manifesto are criticised as follows: (1) Alcohol is sometimes valuable as a drug. This, says the association, is much discussed in medical circles and is not to be settled by ipse dixits, however eminent. In large hospitals the amount used has diminished from 20 to 70 per cent. during the last 20 years. (2) It is said that the universal belief that the moderate use of alcohol is beneficial for adults is amply justified. The belief is by no means universal; millions believe to the contrary. On the other hand, the experience of several life assurance companies and friendly societies shows that abstainers live longer, have less sickness and recover more quickly than non-abstainers. Abstainers can do more work and show greater endurance of cold, fatigue and hardship than non-abstainers. In 1903 an international medical manifesto was signed by many eminent English, American and European professors and by 664 physicians at the instance of the British Medical Temperance Association. This stated: (1) That experiments have demonstrated that small quantities of alcohol are injurious and that it is not a food; (2) that it increases liability to disease and shortens life. On the other hand, those engaged in the liquor trade have eagerly seized on the manifesto in favor of alcohol and used it for all its worth. The Licensed Victuallers' Central Protective Association has reproduced it and distributed it broadcast in leaflets. On the other side the National Temperance League is about to hold a meeting to take decisive steps to counteract the effect of the manifesto on the masses. At the annual meeting of the Society for the Study of Inebriety, the President, Dr. Harry Campbell, described the manifesto as misleading and harmful. Much of the whisky consumed, he said, is raw, immature spirit, practically never more than two or three years old. Therefore, to say that the moderate use of alcohol is beneficial is to encourage the whisky-drinking poor to poison themselves.

Pharmacology

The Viavi Treatment.

Yet one more of what Samuel Hopkins Adams in "The Great American Fraud" calls the "fundamental fakes" has been exposed. The *California State Journal of Medicine* devotes six pages in its April issue to showing up "Viavi;" and it is well done. It appears that two astute and, since they have made their millions, highly respected, men on the Pacific Coast conceived the idea some years ago of instituting a "treatment" for the ills peculiar to women. This "treatment" practically consisted—and, in great part, still consists—of prescribing vaginal douches. But, of course, as our contemporary says, "no large paying business could be built up by simply selling a little good advice and a trifle of common sense. There must be something definite to take, some wonderful secret and very costly remedy that will work the result, to secure which the douche is but the merest preliminary. Hence the 'capsules' and the 'cerate' and the 'liquid' and the 'royal,' and the rest of the wonderful remedies which, collectively, leave little uncured or uncurable by Viavi."

So Viavi is bought and the douche is taken. "The immediate increase of personal comfort, and many times the quick relief from some annoying minor ailment, which follows this exercise of cleanliness and common sense, might so hypnotize the average woman who accepts the Viavi preachments and takes the Viavi 'treatment,' that she would be ready to believe almost anything the promoters care to tell her."

Inquiry was made as to whether the Viavi remedies contained morphin, opium or any habit-forming drug. Nothing of this sort was found, in fact, as our contemporary says: "It was unnecessary to put an expensive article like morphin, and one liable to bring about trouble in the future, into their 'remedies' when they do not need to."

Then the question was put: Are the Viavi remedies used for the prevention of conception? This query was answered by a most emphatic denial. The manufacturers were horrified at the thought of their remedy being put to such repulsive and frightful misuse. The questioners wondered in the face of such evident righteousness on the part of the makers of Viavi how they could have been led to think of such a thing. The thought may have been suggested by a paragraph in a booklet put out by these people, called "Viavi Hygiene." Here we find that " . . . the remarkable effectiveness of the Viavi system of treatment . . . places it in the power of healthy wives to LIMIT THE NUMBER of their offspring for proper reasons, and women who are not fit for maternity to AVOID it by natural means." [The small capitals are inserted for emphasis by the California journal.]

An inability to correctly interpret what appears to be simple English is the only excuse that the enquirers have to offer for their unjust suspicions.

Naturally after two such rebuffs the question arose: What is Viavi? In the language of its makers—who ought to know—it "is purely a vegetable compound—more a food than a medicine, and is prepared in a predigested manner, so that it can be easily absorbed by the tissues of the body with which it comes in contact." But on the other hand analytical chemists reported: "So far as we are able to determine, they contain nothing but the extract of hydrastis and cocoa butter."

But why quarrel about what this wonderful remedy *is* when we know what it will *do?* Gynecology, after the universal adoption of the Viavi treatment, will become a lost art and the gynecologist, who is referred to in Viavi literature as a "body carpenter," will have to cease his sacrilegious "carpentry," for "a very large proportion of women's diseases were really incurable until the Viavi system of treatment was introduced."

But it is on the subject of etiology, pathology and treatment of tumors that Viavi literature really distinguishes itself. Could the cancer commission be but persuaded to read this entlightening treatise it would adjourn *sine die.* Like all great discoveries this one is remarkable for its simpleness. With the ingenuousness characteristic of great scientists the vexed problem of tumor causation is explained as follows: "The cause of these growths (tumors), which by inspiring terror drive so many women to a premature death by way of the operating table, is so simple a thing as a poor circulation of the blood. Tumors are caused by a stagnation of the venous blood. . . . This important discovery on our part has swept away the mist that has always surrounded this subject and enabled us to accomplish the most remarkable cures. . . ."

But not only will Viavi cause a diminution in the size of tissues not wanted, but, *mirabile dictu,* it will bring about an increase in bulk in those tissues which are desired. For, say its exploiters, "we recall particularly the case of a man suffering with wasting of the testicles, who secured perfect recovery from the Viavi cerate applied to the scrotum." The delightful ambiguity of this sentence, by the way, is an illustration of the shrewdness of their literature generally. It will be noticed that they do not say that the patient recovered from the condition for which he was treated, but that he made a "perfect recovery from the Viavi cerate"!

Where statements are made claiming more for the remedy than even the gullible laity would be willing to swallow, the verbiage is so changed as to present the "truth" in the form of a syllogism. To say, point blank, that Viavi would cure appendicitis, paralysis, locomotor ataxia, *et al,* would possibly arouse a healthy skepticism which would prove unhealthy for Viavi. We are told, therefore, in one part of the literature, that all these diseases "and many more, proceed from a depletion of nervous force—*from nervous debility,*" while elsewhere we are informed that Viavi *cures nervous debility.*

Such, as our western contemporary says, is the "business which has made two men, starting with practically nothing, affluent. Their patrons consist of confiding sick and suffering women, to whom, not skilled in medicine, their literature appeals."

We regret that we have not the space to quote the complete article. It is also to be regretted that a reprint of it can not be placed in the hands of those who are being humbugged so effectively by this California fraud.

Correspondence

Medical Practice Among the Maoris.

AUCKLAND, NEW ZEALAND, Feb. 25, 1907.

To the Editor:—In the January 12 number of THE JOURNAL I find an extract from the *British Medical Journal* on "Phthisis and Superstition Among the Maoris." Perhaps your readers may be interested in some observations by myself while acting as local native health officer for four years among these interesting people.

All forms of tuberculosis are widespread among them, and even in localities where the conditions are naturally almost ideal for coping with this disease, it is increasing in all its forms. The principal reason for this is their national custom of holding a "tangi" over the dead. This consists of feasting and mourning of all the relatives of the deceased while the body lies in state, surrounded by weeping women and men who rub noses with one another, and cover and uncover the dead to show new arrivals. No matter what the nature of the disease, this custom is not interfered with. The police dare not interfere. I was once called on to perform an autopsy on a native who had died suddenly without any apparent reason, and when I arrived where the body was lying in state in a tent I was refused permission to do anything and it was only after the police had been called and the tent cleared that I could get to work. Half-way through, the relatives returned with re-enforcements to drive away the desecrating "pakeha tokuta" (whiteman doctor), and I had to be content with what I had done, especially as I had gone far enough to satisfy myself as to the cause of death. The result of this was that those natives had no use for me afterward. I was polluted and would pollute them if I touched them. It is not the policeman that the native child is threatened with as a last means of coercion, but the "pakeha tokuta."

Once I was called in to a native hut to see a sick child, whom I found to be suffering from a psoas abscess. This I opened, and for want of anything better at hand, gathered the pus in some absorbent cotton, and as the best means of getting rid of it, I put it in the cooking stove fire. They took that stove out and would never use it again and not even the fireplace. It was "tabu" ever afterward.

But the serious part of it is that their superstitions have such a hold on them that any wandering Maori "tohunga" (native doctor) who comes along with his incantations is allowed to take precedence and overrule the physician's authority and upset all his work. I once had as a patient a woman who was suffering from pneumonia. I rode many miles on horseback to see her, as I wished to reward the husband for his confidence in coming to me early and before he went to the Maori "tohunga" (doctor). I stayed two days with the woman, and left her on the road to recovery, and with every hope that she would recover. That night after I left she wanted to defecate, and could not be restrained from going to the customary place in the scrub a hundred feet or more from the house, although it was raining hard. She got rapidly worse and died. They will not perform this act in a dwelling, for if they do the dwelling is unclean and can no longer be used as a dwelling.

Before the white man came it was the universal custom of the expectant mother to go off with the husband to a secluded place in the bush near a stream. After parturition, which was always accomplished in the squatting position with the husband clasping his wife's abdomen from behind and aiding the expulsion by squeezing, the woman would lie down in the running water and the husband knead her abdomen with his bare feet. The baby would be washed in the running stream, and all three would go back to the pa.

Never have I seen a Maroi woman lie down as do white women after confinement. They can not be kept down. They sit up almost immediately and next day may be seen hanging out clothes on the line or doing something else just as unexpected.

In times past the Maoris, both male and female, bore pain with the utmost stoicism. I have opened a painful felon for a Maori maiden, who did not flinch any more than if I had only cut her nails, and who looked on at it all the time. But these individuals are rare now. One Maori came to me with a beautifully ripe boil on his wrist and told me that he wanted me to put something on it that would cure it at once. His friend who came as interpreter said he would not have it cut, and knowing the native character well, I simply replied that I would give it only one touch with a remedy that would cure it at once. They were pleased, and I made elaborate preparations to conceal my real intention, and at the crucial moment made a slash with my secreted knife. He instantly fled howling like a madman, and I have not seen him since, but fortunately the other native was in sympathy with my action and I did not lose their confidence (as I properly deserved to), as the touch did all I said it would.

On another occasion I was called by an Irishman, who had married a full-blooded Maori woman, to come and attend his wife in confinement. She had been in labor for three days when he returned from a journey to find her surrounded by all the old Maori women in the district who had given up hope. When I arrived on the scene they had all fled, for they recognized me from afar. The Irishman, who had never attended an event like this before, although he had had fourteen children by this woman, was my only assistant. After really throwing the woman, for she resisted like a fiend, I applied the forceps. With the Irishman hanging on to her shoulders over the head of the bed, a baby was delivered of such dimensions that the father exclaimed when he saw it, "Doether, that's a man child sure!"

When a smallpox scare came on the country some four years ago, I was directed to vaccinate all the natives, both old and young, and strange to say, they took to this as ducks to water, and would arrive at my office or at the outstations in large parties of thirty to a hundred or more. By selecting the youngest baby first and performing the act painlessly on him, I could do the rest, both old and young, without hearing a whimper, and that without any effort to do it painlessly, but rather with every effort to do it expeditiously.

In the effort to get their names in order to record who had been vaccinated, I learned of a curious custom that prevails with them. One was named "Four-o'clock." He was so named when a baby because one of the family had been drowned at 4 o'clock in the afternoon. Another was named "Glass," because at the time he was being fitted with a name a relative died and the coffin maker had sprung an innovation on the natives in the shape of a glass window in the coffin lid. Another child was named "Boots," because a member of the family had died with his boots on. I could recite numberless instances of this primitive way of originating new names.

The "tohunga" is the medicine man of the Maoris and in him they have unshakable faith. The "tohunga" makes most preposterous claims and has little difficulty in attracting a large following. I have known one to call himself Jesus Christ and to claim power to work miracles. He had a cure-all which he compounded at the nearest saloon. It consisted of something out of every bottle or receptacle containing liquor—beer, gin, whisky, brandy—some of each brand. Sick natives at a distance would send him $200 and $300 to come and lay his hands on them. This he would do with great solemnity and much quoting of scripture, and afterward spend the evening with his disciples in the nearest billiard room, interspersing his conversation with lurid oaths in the distraction of an exciting game.

One of these "tohungas" once tore off the bandages and dressings I had placed on a badly burned limb and plastered it with the filthiest mud in the neighborhood. In spite of this the burn healed and he was given credit for the cure.

Once a Maori gets it into his head that he is going to die no "tohunga" nor the cleverest physician could save him, however easy the task. But once I knew of an old man whose relatives concluded he was about to die. They gathered all the tribe from far and near and much food and made every preparation for a glorious "tangi." He lay in his hut unconscious of all that was going on, but accidentally learned

they had really begun a "tangi" on his account. He said I will arise and help them, and he did. He had not made up his mind to die, and since all preparation had been made and everybody invited, it could not be put off. At these "tangis" sometimes six or seven hundred people will assemble and eat and drink almost continuously for days until the last scrap has been swallowed. At one a year or two ago twenty sheep, thirty pigs, two cows, a ton of potatoes, a ton of kumaras (sweet potatoes), half a ton of flour and many tons of fruit and jam and other eatables were consumed. All the food is prepared in the native fashion—in a hole lined with hot stones. Meanwhile, the dead lies stinking right in the middle of this feasting.

Like all superstitious peoples, they have a great horror of spirits, and I have yet to know the Maori who will venture alone in the dark.

Some time ago a steamer, which had been chartered and loaded with 400 Chinese dead men who had been accumulating in New Zealand for some time, foundered off the coast near where I was stationed. Some of the boxes came ashore. One was found by a European and Maori who were riding in company along the beach. They naturally supposed they had found something valuable and opened the outer and then the inner casing, when they came on the lead lining. The European then suspected what they had hold of and allowed the Maori to open the lead lining. He did so, and as soon as he saw the shriveled-up, parchment-like features of the dead Chinaman, he sprang aside, ran for his horse, mounted and galloped away. The beach is 70 miles long, and the European could see him riding for fully an hour as hard as he could make his horse go, and then he went out of sight. And yet the Maoris are brave and resourceful in danger. I have known them to exhibit courage equal in every degree to the best. They have great love for their children, but care little for their old people.

In conclusion, I will relate the experience I had with one of these medicolegal-clerico-schoolmasters. (I mean no reflection on them as a class.) About 70 miles from my station was a native school with about 90 children in attendance. Whooping cough was prevalent. This man did what he could, but was foolish enough to think he knew everything and refused the assistance I was authorized to proffer him. Everything went well until one day he bethought him to take the temperature of his charges. He only had an ordinary wall thermometer in a metal case. This he placed in the mouth of every youngster. It was quite a mouthful. He got an average temperature of 96 degrees. He became alarmed and rode some miles to wire to Wellington, the capital of the country, that a large number of children were in a very serious condition and to plead for help. I received an urgent message to travel fast to their aid. All the patients came out to greet me mostly clad in shirts and some were very short shirts. But for some severe coughing nothing seemed wrong, and perplexed, and I turned to the schoolmaster for an explanation. Well, it transpired that he had heard that no one could live long with a rise of temperature more than 7 or 8 degrees above normal, and he understood the normal temperature was 60 F. This man was called by the natives a "pakeha Maori," which has much the same meaning as does "white trash" in some parts of the United States.

Dr. Pomare, the chief native health officer, himself a half caste and educated in Chicago, states that in thirty years there will not be a full-blooded Maori in existence. While they are building houses like those of the white man, they fail to ventilate or properly drain around them. They often live day and night in the same clothes, frequently allowing wet clothes to dry on their bodies. They alternately feast and starve. After a "tangi" they will have little to eat sometimes for weeks together.

The half-castes are mostly delicate, and tuberculosis is very prevalent among them. The pulmonary form is the most common. As they do not come under skilled care until well advanced, nothing can be done to check it, and they have lost faith in the ability of the "pakeha tokuta" to do them any good. JOHN S. REEKIE, M.D., CH.M.

A New Trypanosome.

OTTAWA, ONT., April 19, 1907.

To the Editor:—Pathologists will be interested in the information that the *Trypanosoma equiperdum* has been found in a mare clinically affected with dourine, or *maladie du coit*, at the quarantine station established by this department at Lethbridge, Alberta, in 1904. The first demonstration was made by Drs. E. A. Watson and M. V. Gallivan, on Feb. 11, 1907, in material taken from a vesicle on the mucous membrane of the vagina of the animal above referred to, which was found to be affected with dourine on the premises of her owner, Mr. R. Tiffin, near Lethbridge, on Dec. 21, 1906, and subsequently removed to the quarantine station for purposes of experimental observation.

The disease was successfully transmitted in February to a yearling filly and the parasite subsequently observed in preparations from a fresh plaque. The finding was confirmed by Dr. C. H. Higgins, pathologist of the department, on March 21, and was further observed in preparations taken by him on March 23 and 25.

The identity of dourine, or *maladie du coit*, as seen on this continent and hitherto diagnosed by American and Canadian veterinarians from clinical manifestations alone, with the disease as known in Africa and Asia, as well as in southern Europe, is thus fully established.

A detailed report of the discovery and of the work which led up to it, as well as of the steps subsequently taken, will be issued at the earliest possible date.

J. G. RUTHERFORD,
Veterinary Director General.

Association News

House of Delegates, Session of 1907.

As a number of the state associations have not yet held their meetings for 1907, it is impossible to give, at this time, a complete list of the members of the House of Delegates for the Atlantic City session. The following is a list of the holdover delegates and of the newly elected members who have been reported up to the time of going to press.

ARKANSAS.
E. K. Williams, Arkadelphia.

COLORADO.
Hubert Work, Pueblo.
J. N. Hall, Denver.

CONNECTICUT.
George R. Shepherd, Hartford.

DELAWARE.
Peter W. Tomlinson, Wilmington.

DISTRICT OF COLUMBIA.
George N. Acker, Washington.

FLORIDA.
Joseph N. Porter, Key West.

GEORGIA.
T. D. Coleman, Augusta.
T. P. Waring, Savannah.

IDAHO.
R. L. Nourse, Boise.

ILLINOIS.
George W. Webster, Chicago.
J. L. Wiggins, East St. Louis.
O. B. Will, Peoria.
Charles L. Mix, Chicago.

IOWA.
E. E. Dorr, Des Moines.
William Jepson, Sioux City.

KANSAS.
C. E. Bowers, Wichita.

KENTUCKY.
J. Garland Sherrill, Louisville.
J. N. McCormack, Bowling Green.
W. W. Richmond, Clinton.

MAINE.
E. M. Fuller, Bath.

MARYLAND.
G. L. Taneyhill, Baltimore.

MASSACHUSETTS.
Walter P. Bowers, Clinton.
Frank G. Wheatley, North Abington.
Edward H. Bradford, Boston.
C. H. Cook, Natick.
R. C. Cabot, Boston.

MICHIGAN.
A. I. Lawbaugh, Calumet.
Leartus Connor, Detroit.

MINNESOTA.
John T. Rogers, St. Paul.
A. E. Spalding, Luverne.

MISSISSIPPI.
John Darrington, Yazoo City.
W. W. Crawford, Hattiesburg.

MONTANA.
Donald Campbell, Butte.

NEBRASKA.
R. C. Moore, Omaha.

NEVADA.
J. E. Pickard, Virginia City.

NEW HAMPSHIRE.
John M. Gile, Hanover.

NEW JERSEY.
Chas. L. Kipp, Newark.

NEW YORK.
Wisner R. Townsend New York City.
Abraham Jacobi, New York City.

J. W. Grosvenor, Buffalo.
D. C. Moriarta, Saratoga.
Albert Vander Veer, Albany.
W. S. Ely, Rochester.
H. L. Elsner, Syracuse.
A. T. Bristow, Brooklyn.
R. Park, Buffalo.
H. D. Wey, Elmira.

PENNSYLVANIA.

Fremont W. Frankhauser, Reading.
Adolph Koenig, Pittsburg.
William T. Williams, Mt. Carmel.
Samuel Wolfe, Philadelphia.
Alexander R. Craig, Philadelphia.
George W. Guthrie, Wilkes-Barre.
Edward B. Heckel, Pittsburg.
Walter Lathrop, Hazleton.

OHIO.

Frank D. Bain, Kenton.
A. B. Walker, Canton.

OREGON.

H. W. Cole, Portland.

RHODE ISLAND.

John Champlin, Westerly.

TENNESSEE.

T. J. Happel, Trenton.

TEXAS.

J. T. Wilson, Sherman.
C. E. Cantrell, Greenville.
A. C. Scott, Temple.
S. T. Turner, El Paso.
Frank Paschal, San Antonio.

UTAH.

Philo E. Jones, Salt Lake City.

VERMONT.

J. Henry Jackson, Barre.

WASHINGTON.

N. Fred Essig, Spokane.

VIRGINIA.

Wm. E. Anderson, Farmville.

WISCONSIN.

W. H. Washburn, Milwaukee.
W. T. Sarles, Sparta.
B. M. Caples, Waukesha.

SECTIONS.

HYGIENE AND SANITARY.

Denslow Lewis, Chicago.

SURGERY AND ANATOMY.

F. B. Lund, Boston.

OPHTHALMOLOGY.

Samuel D. Risley, Philadelphia.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, CONTRACT PRACTICE, INSURANCE FEES, MEDICAL LEGISLATION, ETC.

Workingmen's Insurance in Germany.

During a recent visit to this country Prof. Frederich Müller read a paper at the Boston Medical Library on "Social Legislation in Germany and Its Influence on the Care of the Sick." It is significant that Professor Müller considered social medicine of sufficient importance as a subject for one of the few papers which he read in this country, instead of taking up some phase of technical work.

Professor Müller emphasized the fact that in Germany the relation between the medical profession and the state has assumed much greater importance than it has, as yet, in America. National legislation along this line was begun in Germany in 1883, by providing for compulsory industrial insurance against disease, invalidism and old age, and accident. At present 15,000,000 people in the German Empire are protected by the first form of insurance. Each individual who works for wages pays two-thirds of the cost of his insurance, the other third being paid by the employer. For this the employé receives free medical treatment and medicine, either at home or in a public hospital, for six months, if necessary. He also receives half pay for the time for which he is incapacitated, and, if he dies within six months, a certain amount is paid to his family. This form of insurance protects against acute diseases.

A second form, which provides for chronic invalidism and old age, insures a certain amount to each working person of 70, as well as to persons under 70 who may be physically disabled. Chronic and incurable diseases entitle the insured to a benefit, if he is incapable of earning one-third of the wages which he earned before contracting the disease. This form of insurance is held by about 12,000,000 people, and the amount of benefit paid runs from $45 to $120 per year, one-half of which is paid by the employers and one-half by the employés.

The third form of insurance is against accident. The entire amount of the benefit in this case is paid by the employer. The natural result is to stimulate every possible care regarding accidents and the use of all forms of safety devices on machinery. A certain sum is paid for crippling and disabling injuries. Professor Müller stated that while this plan naturally results in a considerable amount of malingering on the part of the employés, it is felt that the beneficial results outweigh the harmful. In spite of the great increase in German industries, the number of accidents have actually, as well as relatively, decreased in the last years.

An interesting feature of this plan of workingmen's insurance is its bearing on the medical profession. The first arrangements provided that each insurance company organized under the protection and encouragement of the state should have a surgeon who should do all the work for that company. This led to great reduction in fees, and finally to the "doctors' strike," concerning which so much has been said. The result of the refusal of the physicians to work for the amount named was that the fees were raised and the patient was also given the right to choose his own physician.

The experience of the profession and the public regarding workingmen's insurance in Germany is o interest to physicians in this country. The workings of the German system should be carefully watched in order that if such a plan is ever inaugurated here we may profit by the lessons which have been learned in that country.

One Physician's Influence.

A striking illustration of the influence which physicians can have in public affairs is furnished by Dr. George T. McWhorter of Riverton, Ala., who for the last year has been president of the Medical Association of the State of Alabama, and who is also a state senator. As president of the admirable organization of physicians in Alabama, Dr. McWhorter is in a position to speak authoritatively in the state senate for his profession. Among other bills which he has recently introduced is one providing for an epileptic colony for the care and treatment of epileptic patients, either at the public charge or at the cost of their friends. The bill has the endorsement of the state association and will probably be passed.

Writing regarding the work of the legislature in his state, Dr. McWhorter stated in a recent letter: "Medical men have been sadly derelict in bringing to bear the influence on public affairs which should have been exerted by a learned and influential profession. We have tamely relinquished almost all political power and influence until, as a profession, we have almost ceased to be a factor in shaping legislation. We are largely to blame for this ourselves, as we have maintained an attitude of cold hostility toward any member of our profession who ventured to seek political preferment, no matter how able and well qualified he might be. In the meantime we have begged favors when we should have been in position to have dispensed them.

"We should not submit to being relegated to a subordinate position. We should take a lesson from the legal profession on this subject. We should steadily and persistently demand the establishment of a department of public health in the United States, with a representative of the first rank of our profession in the cabinet of the President. The necessities of the age demand this and it is due the medical profession. Many of the most important problems of to-day are sanitary and hygienic in character. All thoughtful men now recognize the fact that the sanitary problems at Panama dominate and control the engineering difficulties, vast and complicated as the latter are. The men who plan and institute sanitary measures of such transcendent importance to the success of military undertakings, as well as commercial and industrial enterprises, should receive proper recognition from the government they serve.

"The domain of the legislator has been immensely widened. The lawmaker now needs the assistance, counsel and advice which can only be had from the thoroughly trained medical man. The legislation of the age should reflect the science of the age and conform to its medical needs. It can not do so unless guided by men familiar with medical science and acquainted with its needs. A department of public health in charge of a high-grade physician, his annual reports to the President, to be in turn, transmitted to Congress, would set before our national legislators the demands of commerce as well as the medical needs of the people."

Dr. E. E. Maxey, secretary of the Idaho State Medical Society, reports the passage of a bill providing for a state board of health and making an appropriation for its support for two years. Two bills introduced into the legislature, which provided for serious modifications of the present medical practice act, were killed in committee.

Marriages

BIRD J. A. BOMBARD, M.D., to Miss Anna Courcy, both of Burlington, Vt., April 10.

STANLEY LINCOLN ALLEN, M.D., to Miss Lucy Brown, both of Zanesville, Ohio, April 17.

FREDERICK N. BLANCHARD, M.D., to Miss Alice Osgood, both of Detroit, Mich., April 9.

DANIEL J. PRICE, M.D., Newark, Ohio, to Miss Flora Furniss of Columbus, Ohio, April 17.

BRYCE REX WINBIGLER, M.D., Seaton, Ill., to Miss Estella E. Jamieson of Monmouth, Ill., April 11.

GAYLORD CRAWFORD HILL, M.D., to Miss Gertrude Dorothy Laib, both of Louisville, Ky., April 25.

ANGUS McLEAN, M.D., to Mrs. Rebecca Scotten Day, both of Detroit, Mich., at Atlantic City, N. J., April 8.

GUSTAVE E. HENSCHEN, M.D., Georgetown, Texas, to Miss Ida A. Anderson of Racine, Wis., April 10.

ALBERT H. McMURRAY, M.D., Youngwood, Pa., to Miss O. Marian Wingfield, at Cumberland, Md., April 10.

Deaths

Edward **Oscar Fitzalan Roler, M.D.** Rush Medical College, Chicago, 1859; who received his degree of A.M. from DePauw University, Greencastle, Ind.; a member of the Illinois State and Cook County medical societies; during the Civil War assistant surgeon of the Forty-second and surgeon of the Fifty-fifth Illinois Volunteer Infantry, and later medical director of the Fifteenth Army Corps on the staff of Gen. W. T. Sherman and of Gen. John A. Logan; for 45 years a prominent practitioner and obstetrician of Chicago; for two years surgeon of the U. S. Marine Hospital; professor of obstetrics and diseases of women and children for many years in Chicago Medical College (Northwestern University Medical School), and later professor emeritus of obstetrics, who retired from active practice about three years ago on account of ill health, died at his home in Chicago, April 18, from chronic gastritis and interstitial nephritis, aged 74.

William **Taylor, M.D.** Medical Department of the Tulane University of Louisiana, New Orleans, 1852; a member of the Alabama State and Mobile County medical societies; surgeon of the Seventh Alabama Infantry, C. S. A., and subsequently chief surgeon of brigade and division during the Civil War; to whose oration before the Alabama Medical Association in Mobile in 1855, on "The Eligibility of Mobile as a Site for a School of Medicine" is said to have been due the foundation of the Mobile Medical College; one of the incorporators of the Alabama School for the Deaf, Talladega, and for more than 30 years chairman of its board of trustees; a member of the Alabama legislature in 1876 and 1880, died at his home in Talladega, April 7, from malignant disease of the brain, after an illness of several months, aged 80.

William **Robertson Campbell, M.D.** University of Buffalo (N. Y.) Medical Department, 1880; a member of the New York State and Niagara County medical societies; surgeon of the First Battalion N. G., N. Y., with the rank of captain; president of the Niagara Home Telephone Company; one of the curators of the University of Buffalo, and president of the alumni association, died at his home in Niagara Falls, N. Y., April 9, from carcinoma of the liver, after a long illness, aged 53.

Gustav **J. Finstad, M.D.** University of Minnesota, College of Medicine and Surgery, Minneapolis, 1893; a member of the American Medical Association, and a practitioner of Menominie, Wis.; who had been under treatment at the Mounds Parks Sanitarium, St. Paul, Minn., for acute nervous disorder, is reported to have committed suicide by hanging himself, in his room in that institution, April 12, aged 42.

Justin **Llewellyn Barnes, M.D.** New York University Medical College, New York City, 1885; a member of the New York State and New York County medical societies and the New York Academy of Medicine; a member of the staff of the Manhattan Eye and Ear Infirmary for 20 years, died at his home in New York City, April 13, from heart disease, after an illness of two years, aged 47.

Walter **Augustus Stevens, M.D.** Rush Medical College, Chicago, 1887 (Honorary Degree); said to have been the oldest practicing dentist in Chicago; treasurer of the Illinois State Dental Society from 1890 to 1895, and president of the society in 1895; died at his home in Chicago, April 15, from the effects of a fracture of the hip, after an illness of almost a year, aged 76.

Elijah A. Woodward, M.D. Berkshire Medical College, Pittsfield, Mass., 1842; said to have been the oldest practitioner of Dane County, Wis., where he had practiced since 1855; assistant surgeon of the Twelfth Wisconsin Volunteer Infantry, and assistant surgeon and surgeon of the Thirty-sixth Wisconsin Volunteer Infantry, during the Civil War, died at his home in Sun Prairie, Wis., April 8, from influenza, aged 90.

Charles B. Combe, M.D. Jefferson Medical College, Philadelphia, 1858; a member of the Texas State and Cameron County medical societies; surgeon in the Confederate service during the Civil War; who did effectual service during the epidemics of yellow fever in the Rio Grande country, died at his home in Brownsville, Texas, March 31, aged 70.

Andrew Meeker Mills, M.D. College of Physicians and Surgeons in the City of New York, 1892; a member of the American Medical Association and physician of Essex County, N. J., died at his home in Newark, April 21, from the effects of a wound of the throat, said to have been self-inflicted while temporarily insane, aged 36.

John B. Wood, M.D. St. Louis Medical College, 1860; assistant surgeon in Shelby's Brigade, C. S. A., throughout the Civil War; prominent as a practitioner of central Missouri; president of the Bank of Saline, died at his home in Marshall, April 13, from tuberculosis, after an illness of about five years, aged 68.

William F. Atwell, M.D. Cincinnati College of Medicine and Surgery, 1881; a member of the Wisconsin State and Portage County medical societies; at one time city physician of Stevens Point, Wis., died suddenly at his home in Amherst, April 8, from arteriosclerosis, after an illness of two years, aged 58.

Francis H. Gaines, M.D. Medical Department of University of Nashville, Tenn., 1856; a member of the Kentucky State and Carroll County medical societies; surgeon in the Confederate Army during the Civil War, died at his home in Carrollton, April 14, after an operation for strangulated hernia, aged 74.

Daniel Edgar Pocock, M.D. New York University Medical College, New York City, 1876; a member of the Ohio State and Ashland County medical societies; one of the oldest practitioners of Jeromeville, died at Lakeside Hospital, Cleveland, April 7, after an operation for the removal of gallstones, aged 54.

George F. Gale, M.D. Berkshire Medical College, Berkshire, Mass., 1855; surgeon of the Eighth Vermont Volunteer Infantry during the Civil War, and since 1858 a resident of Brattleboro, Vt., died at his home in that city, April 14, from senile debility, after an illness of a few weeks, aged 79.

Henry DeWitt Joy, M.D. College of Physicians and Surgeons in the City of New York, 1866; surgeon for the Pacific Mail Steamship Company and for 17 years chief surgeon at Sailor's Snug Harbor, died at his home in West New Brighton, Staten Island, April 15, from cerebral hemorrhage, aged 63.

Amos B. Paun, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1869; a member of the Massachusetts State and Plymouth County medical societies; for many years a practitioner of Middleboro, Mass., died at his summer home in Onset, Mass., April 6, aged 60.

Elmer H. Rogers, M.D. Jefferson Medical College, Philadelphia, 1885; a member of the New Jersey State and Mercer County medical societies and of the Trenton Medical Library Association, died suddenly at his home in Trenton, April 11, from angina pectoris, aged 47.

William Frank Morrison, M.D. Medical School of Harvard University, Boston, 1882; a member of the American Medical Association and a prominent practitioner of Providence, R. I., died suddenly at his home in that city, April 9, from cerebral hemorrhage, aged 49.

Richard G. Kratsch, M.D. University of Würzburg, Germany, 1870; assistant surgeon during the Austro-Prussian War in 1866; later a ship surgeon and a practitioner of New York City, died at his home in Milwaukee, January 22, aged 63.

Thomas Edward Hardy, M.D. University of Maryland School of Medicine, Baltimore, 1849; who had practiced in Frederick County, Md., for more than 50 years, died at his home in Burkittsville, April 11, from pneumonia, aged 76.

Arthur F. Ritchie, M.D. McGill University Medical Faculty, Montreal, 1876; of Duluth, Minn.; a member of the Minnesota State and St. Louis County medical societies, died at Mount Clemens, Mich., April 1, from heart disease, aged 52.

Austin S. Tinsley, M.D. University of Georgia, Medical Department, Augusta, 1888; a member of the Georgia State and Richmond County medical societies; died at his home in Augusta, April 16, after an illness of two weeks, aged 38.

William W. Genge, M.D. Faculty of Medicine of Queen's University and Royal College of Physicians and Surgeons, Kingston, Ont., 1891; died at his home in St. Johnsbury, Vt., April 10, from pneumonia, after a short illness, aged 39.

Dietrich C. Husmann, M.D. Western Reserve University Medical College, Cleveland, Ohio, 1879; at one time a member of the board of education, died at his home in Cleveland, April 12, from acute disease of the liver, aged 59.

Raymond Palmer Robbins, M.D. Minnesota Hospital Medical College, College of Medicine and Surgery of the University of Minnesota, Minneapolis, 1904; died at his home in Portland, Ore., April 16, from spinal meningitis, aged 27.

William Armes, M.D. (Licensed Kentucky, 1867); a member of the Grayson County (Ky.) Medical Society, died at his home in Shrewsbury, Ky., March 6, from pneumonia, after an illness of six days, aged 77.

F. P. Brunthaven, M.D. Medical Department of Western Reserve University, Cleveland, Ohio, 1889; of Tomales, Cal., died from appendicitis at the French Hospital, San Francisco, April 4.

Oliver Crook Haugh, M.D. Louisville (Ky.) Medical College, 1893; convicted of the murder of his father, mother and brother in 1905, was electrocuted at Columbus, Ohio, April 20.

Jason L. Edgar, M.D. University of Missouri Medical Department, Columbia, 1875; died suddenly at his home in Clearwater, Fla., March 13, from cerebral hemorrhage, aged 63.

Thomas S. Parr, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1886; died at his home in Indianola, Iowa, January 2, from appendicitis, aged 64.

Henry Swayer Hahn, M.D. Indiana Medical College, La Porte, 1848; city physician of Chicago in 1870, died at the residence of his daughter in that city, April 17, aged 81.

Jerome B. Lawrence, M.D. New York Homeopathic Medical College and Hospital, New York City, 1885; died at his home in Brooklyn, N. Y., April 11, after a long illness.

William S. Patterson, M.D. Medical College of Ohio, Medical Department of University of Cincinnati, 1853; died at his home in Hillsboro, Ohio, Dec. 30, 1906, aged 76.

G. Hamlin Anderson, M.D. Hahnemann Medical College and Hospital of Chicago, 1886; died at his home in Seneca, Kan., April 9, after an illness of four years, aged 46.

Edward P. Miller, M.D. Hahnemann Medical College and Hospital, Chicago, 1871; for many years a practitioner of Chicago, died in Denver, Colo., April 15, aged 65.

G. W. Mason, M.D. Chicago Medical College, 1880; for many years a prominent physician of Monroe County, Ohio, died at his home in Stafford, April 8, aged 80.

Emory W. Blackburn, M.D. Eclectic Medical Institute, Cincinnati, 1885; died at his home in Latrobe, Pa., April 4, from septicemia, due to a carbuncle.

John L. Brown, M.D. University of Nebraska College of Medicine, Lincoln and Omaha, 1904; died at his home in Western, Neb., February 4.

A. Theodore Braxton, M.D. Meharry Medical College, Nashville, Tenn., 1897; died at his home in Columbia, Tenn., April 8, from tuberculosis.

Helene C. Byington, M.D. Boston University School of Medicine, 1896; died at her home in Montrose, Colo., April 13, from influenza, aged 47.

William F. Noe, M.D. Barnes Medical College, St. Louis, 1901; was shot and killed in his office in Mountain Home, Ark., February 8, aged 38.

Charles Eugene Casgrain, M.D. McGill University Medical Faculty, Montreal, 1851; died at his home in Windsor, Ont., March 8, aged 82.

J. A. Meek, M.D. Southern Botanico-Medical College, Macon, Ga., 1871; died at his home in Jonesboro, Ark., recently, aged 76.

Death Abroad.

Thomas Henry Wakley, F.R.C.S., senior editor and proprietor of the *Lancet*, died at his residence in Queen's Gate, London, on April 5, aged 86. He was the eldest son of Thomas Wakley, the founder of the *Lancet*, and well-known coroner and member of Parliament, who was associated with all the advanced political movements of the early Victorian days. He was educated at University College, London, became a member of the College of Surgeons in 1845, and a fellow four years later. In 1848 he was appointed surgeon to the Royal Free Hospital, where he established a reputation as a skilful operator. He devoted himself specially to aural surgery and orthopedics and attained an extensive practice. On the death of his father, in 1862, he became manager of the *Lancet*, his younger brother, Dr. James Wakley, being the editor. His new duties led to the gradual abandonment of practice, and in 1886, on the premature death of his brother, he took over the editorship of the paper in conjunction with his son. Under this joint editorship the journal has progressed on the lines laid down by its founder, and has maintained the highest position from all standpoints—scientific, literary and ethical. Like most successful editors, Mr. Wakley did not write much; but he was skilful and keen in discovering men who could write and what they could write. Like his father, he was bold in exposing public evils. His principal original work was an article on "Diseases of Joints," contributed to Samuel Cooper's "Surgical Dictionary," then the standard work on surgery in England. His sympathy with the profession was shown by many private acts of generosity as well as by the foundation of the *Lancet* relief fund, contributed entirely by himself and his son to meet unforese r. and urgent pecuniary exigencies among members of the profession. His activity, physical and mental, was unbounded. He was never ill and never absent from his duties. Even in his eighty-second year he journeyed to the office daily from Brighton (where he spent the summer). He leaves a widow, a son, Thomas Wakley, Jr., who has been for twenty years his father's colleague in the editorship of the *Lancet*, and a daughter.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, for the week ending April 20, 1907:

Snyder, Henry D., surgeon, granted thirty days' leave of absence, with permission to apply for fifteen days' extension.

Usher, F. M. C., asst.-surgeon, relieved from duty at Fort Brady, Mich., and will proceed to San Francisco and report not later than April 29, 1907, to the medical superintendent, Army Transport Service, that city, for duty as surgeon transport *Buford* during the voyage of that vessel to China and the Philippine Islands. On arrival at Manila, Captain Usher will report in person to the commanding general, Philippines Division, for assignment to duty.

Bloombergh, Horace D., asst.-surgeon, detailed as a member of the examining board appointed to meet at Fort Riley, Kans., vice Captain Elmer A. Dean, asst-surgeon, hereby relieved.

Whitmore, Eugene R., asst.-surgeon, relieved from duty at Fort Jay, N. Y., and ordered to Fort Riley, Kans., for duty.

Dean, Elmer A., asst.-surgeon, granted ten days' leave of absence.

Bosley, John R., asst.-surgeon, left Jefferson Barracks, Mo., on ten days' leave of absence.

Adair, George W., asst.-surgeon general, granted fifteen days' leave of absence.

Wadhams, S. H., asst.-surgeon, granted leave of absence for one month on surgeon's certificate of disability.

Girard, Joseph B., asst.-surgeon general, on the expiration of his present leave of absence, will proceed to Atlanta, Ga., and report in person to the commanding general, Department of the Gulf, for duty as chief surgeon of that department, relieving Lieutenant-Colonel William W. Gray, deputy surgeon-general.

Gray, William W., deputy surgeon-general, on being relieved from duty as chief surgeon, Department of the Gulf, by Colonel Joseph B. Girard, asst.-surgeon general, will proceed to Omaha and report in person to the commanding general, Department of the Missouri, for duty as chief surgeon of that department, relieving Lieutenant-Colonel John M. Banister, deputy surgeon-general.

Banister, John M., deputy surgeon-general, on being relieved from temporary duty as chief surgeon, Department of the Missouri, by Lieutenant Colonel William W. Gray, deputy surgeon-general, will return to his proper station, Fort Riley, Kans.

Flagg, Charles E. B., asst.-surgeon, granted leave of absence for four months, to take effect on or about May 1, with permission to apply for an extension of one month.

Bell, Richard P., contract surgeon, ordered from Fort Wadsworth, N. Y., to temporary duty as surgeon of the transport *Kilpatrick*.

Johnstone, Ernest K., contract surgeon, ordered to accompany troops to duty in Yosemite National Park.

Bell, Leonard P., contract surgeon, relieved from duty in the Philippines Division and ordered to Fort Riley, Kans., for duty.

Newton, Ralph W., contract surgeon, relieved from duty at Fort Niagara, N. Y., and ordered home, Barre, Vt., for annulment of contract.

Wren, Raphael J., contract surgeon, ordered to Fort Totten, N. Y., for duty.

Robert, Michael A., contract surgeon, relieved from duty at Fort Totten, N. Y., and ordered to Fort Terry, N. Y., for duty.

Suggs, Frank, contract surgeon, relieved from duty at Fort Terry, N. Y., and ordered to Fort Niagara, N. Y., for duty.

Card, Daniel P., contract surgeon, ordered to Fort Jay, N. Y., for duty.

Tyler, George T., contract surgeon, left Fort Monroe, Va., for duty at West Point, N. Y.

Stephenson, Andrew V., contract surgeon, ordered from Crawford, Neb., to San Francisco for duty in the Department of California.

Stallman, George E., dental surgeon, left Fort McIntosh, Texas, for duty at Fort Reno, Okla.

Voorhies, Hugh G., dental surgeon, arrived at San Francisco, Cal., on the transport *Logan* for treatment at the General Hospital, San Francisco.

Patterson, Edwin W., contract surgeon, arrived at San Francisco on the transport *Logan* on leave of absence for three months.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending April 20, 1907:

Gatewood, J. D., surgeon, ordered to additional duty in the Bureaus of Medicine and Surgery, Navy Department.

Bertolette, D. N., medical director, sick leave further extended three months.

Delancy, C. H., P. A. surgeon, ordered to Naval Medical School Hospital, Washington, D. C., for treatment and observation.

Downey, J. C., assistant surgeon, granted leave for one year from April 15.

McGuigan, J. H., pharmacist, granted sick leave for three months.

Spear, R., surgeon, when discharged from treatment at the Naval Hospital, Mare Island, Cal., ordered home and granted sick leave for two months.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended April 17, 1907:

Carrington, P. M., surgeon, granted leave of absence for 3 days from April 15, 1907, under Paragraph 189 of the Regulations.

Fox, Carroll, P. A. surgeon, granted an extension of leave of absence for 15 days from April 29, 1907.

Berry, T. D., P. A. surgeon, granted leave of absence for 1 day.

Stimson, A. M., asst.-surgeon, leave of absence granted for 7 days from April 6, 1907, under Paragraph 191 of the Regulations, amended to read for 5 days.

Rucker, W. C., asst.-surgeon, directed to proceed to Norfolk, Va., and assume charge of the Service exhibit at the Jamestown Ter-Centennial Exposition at Hampton Roads, Va.

Ward, W. K., asst.-surgeon, granted leave of absence for 1 month, or so much thereof as may be necessary, on account of sickness from April 7, 1907.

Salmon, T. W., asst.-surgeon, granted leave of absence for 10 days from April 19, 1907.

Walker, T. Dyson, acting asst.-surgeon, granted leave of absence for 9 days from April 12, 1907.

Holt, E. M., pharmacist, authorized to proceed to New Orleans, special temporary duty, once each month for 3 months, on completion of which to rejoin station.

BOARDS CONVENED.

A board of medical officers was convened to meet at Wilmington, N. C., April 15, 1907, for the physical examination of an officer of the Revenue-Cutter Service. Detail for the board: P. A. Surgeon C. H. Lavinder, chairman.

A board of medical officers was convened to meet at Seattle, Wash., April 19, 1907, for the purpose of examining an alien immigrant. Detail for the board: P. A. Surgeon J. H. Oakley, chairman; Asst.-Surgeon H. G. Ebert; Acting Asst.-Surgeon F. R. Underwood, Recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended April 19, 1907:

SMALLPOX—UNITED STATES.

California: San Francisco, March 23-30, 1 case.
Florida: Duvall County, Jacksonville, March 30-April 6-13, 1 case, 1 death; Hillsboro County, April 6-13, 7 cases; Polk County, April 6-13, 7 cases; Santa Rosa County, April 6-13, 6 cases.
Georgia: Augusta, April 2-9, 1 case.
Illinois: Chicago, March 30-April 13, 4 cases; Galesburg, March 30-April 6, 5 cases; Peoria, March 30-April 6, 17 cases.
Indiana: Indianapolis, March 31-April 7, 4 cases; South Bend, March 30-April 6, 2 cases.
Iowa: Everly, March 30, present; Spencer, March 30, present.
Kentucky: Louisville, March 28-April 11, 11 cases.
Louisiana: New Orleans, March 30-April 6, 3 cases.
Massachusetts: Chelsea, March 30-April 6, 8 cases; Haverhill, March 30-April 6, 1 case; Lawrence, March 30-April 6, 27 cases.
Michigan: Detroit, March 30-April 13, 12 cases.
Minnesota: Winona, March 30-April 6, 2 cases.
Mississippi: Natchez, March 23-April 6, 1 case.
Missouri: St. Joseph, March 30-April 6, 9 cases; St. Louis, March 30-April 6, 4 cases.
New Jersey: Hoboken, April 6-13, 1 case.
New York: New York, March 30-April 6, 4 cases.
North Carolina: Charlotte, March 30-April 13, 2 cases.
Ohio: Cincinnati, May 29-April 5, 1 case; Cleveland, May 24-April 12, 2 cases.
Tennessee: Nashville, April 6-13, 1 case.
Texas: Bell County, March 23-April 6, 206 cases; Galveston, April 5, 5 cases; San Antonio, December 29-April 6, 9 cases.
Washington: Spokane, March 30-April 6, 6 cases (1 imported).
Wisconsin: Appleton, March 30-April 6, 1 case; Milwaukee, March 23-30, 5 cases.

SMALLPOX—INSULAR.

Porto Rico: San Juan, April 2, 13 cases.

SMALLPOX—FOREIGN.

Brazil: Rio de Janeiro, March 3-10, 1 death.
Canada: Winnipeg, March 30-April 6, 2 cases.
China: Niuchwang, January 1-February 3, present; Shanghai, February 27-March 9, 1 case, 7 deaths.
Egypt: Cairo, March 11-18, 1 case.
France: Marseilles, March 1-31, 238 deaths; Paris, March 16-23, 12 cases.
India: Bombay, March 5-12, 1 death; Calcutta, February 23-March 9, 68 deaths; Rangoon, February 23-March 9, 1 death.
Italy: General, March 21-28, 22 cases; Turin, March 9-16, 1 case.
Mexico: Aguas Calientes, March 23-30, 6 deaths; Mexico City, March 2-9, 12 deaths; Tuxpam, March 26-April 2, 2 deaths.
Portugal: Lisbon, March 16-23, 12 cases.
Russia: Moscow, March 2-16, 4 cases, 1 death; Odessa, March 9-16, 32 cases, 2 deaths; Riga, March 16-23, 2 cases; St. Petersburg, March 9-16, 1 death; Warsaw, February 23-March 9, 11 deaths.
Spain: Valencia, March 17-24, 3 cases.
Brazil: Rio de Janeiro, March 3-10, 1 case, 1 death.

CHOLERA.

India: Bombay, March 5-19, 4 deaths; Calcutta, February 28-March 2, 33 deaths; Madras, March 2-8, 10 deaths; Rangoon, February 23-March 9, 29 deaths.

PLAGUE—INSULAR.

Hawaii: Honolulu, April 15, 2 deaths.

PLAGUE—FOREIGN.

Australia: Queensland—Brisbane, February 2-9, 3 cases, 1 death; Port Douglas, February 2-9, 6 cases. New South Wales—Sydney, February 2-9, 4 cases, 1 death; Kempsey, February 2-9, 4 cases, 3 deaths.
Brazil: Rio de Janeiro, March 3-10, 6 cases, 2 deaths.
Egypt: Ismailia, March 10-April 6, 3 cases, 3 deaths; Port Said, March 8-17, 1 case, 2 deaths; Assiout Province, March 8-16, 15 cases, 7 deaths; Beni Souef Province, March 12-19, 4 cases, 3 deaths; Girgeh Province, March 9-16, 30 cases, 23 deaths; Keneh Province, March 11-18, 26 cases, 20 deaths; Minieh Province, March 13-18, 2 cases, 1 death.
India: General, March 2-9, 3,426 cases, 2,971 deaths; Bombay, March 5-19, 978 deaths; Rangoon, February 23-March 9, 124 deaths.

Society Proceedings

COMING MEETINGS.

American Medical Association, Atlantic City, June 4-7.

Association of American Medical Colleges, Washington, May 6
American Therapeutic Society, Washington, May 4-7.
Amer. Assn. of Genito-Urinary Surgeons, Washington, May 7-9.
Am. Assn. of Pathologists and Bacteriologists, Washington, May 7-9.
Amer. Climatological Association, Washington, May 7-9.
American Gynecological Society, Washington, May 7-9.
Amer. Laryngological Association, Washington, May 7-9.
Amer. Medico-Psychological Association, Washington, May 7-9.
American Ophthalmological Society, Washington, May 7-9.
American Orthopedic Society, Washington, May 7-9
American Pediatric Society, Washington, May 7-9.
American Assn. of Physicians, Washington, May 7-9.
American Surgical Association, Washington, May 7-9.
Nebraska State Medical Association, Omaha, May 7-9.
Texas State Medical Association, Mineral Wells, May 7.
Utah State Medical Association, Salt Lake City, May 7-8.
New Mexico Medical Association, Las Cruces, May 8-9.
Kansas Medical Society, Kansas City, May 8-10.
Oklahoma State Medical Association, Shawnee, May 14-15.
North Dakota State Medical Association, Minot, May 14-15.
Louisiana State Medical Society, New Orleans, May 14-16.
Arkansas Medical Society, Little Rock, May 15-17.
Iowa State Medical Society, Cedar Rapids, May 15-17.
Michigan State Medical Society, Saginaw, May 15-16.
Missouri State Medical Association, Jefferson City, May 14-16.
Montana State Medical Association, Billings, May 15-16.
New Hampshire Medical Society, Concord, May 16-17.
West Virginia State Medical Association, Huntington, May 15-17.

MEDICAL ASSOCIATION OF GEORGIA.

Fifty-Eighth Annual Session, held at Savannah, April 17-19, 1907.

The President, Dr. H. H. Martin, Savannah, in the Chair.

After the customary addresses of welcome, the reading of papers began, the scientific work being divided into two sections, medical and surgical.

The Training of Epileptic and Feeble-Minded Children.

Dr. Wesley Taylor, Atlanta, advocated a state school for the feeble-minded and epileptic, open and free to any one in the state, either to train their children up to a certain standard of efficiency or to relieve them of their embarrassment. He

asked the cooperation and endorsement of the association. Manual training is at length beginning to be appreciated and valued as it deserves, and in connection with other training it is intended to teach some useful and simple trade to those capacitated for such work.

DR. H. D. ALLEN, Milledgeville, thinks it is incumbent on the state to establish a colony for the epileptic and feeble-minded. It is known how much good has been done for the deaf and dumb. The deaf and dumb can be taught to read and write by experienced teachers. Feeble-minded children can not be properly cared for at home, for the reason that members of the family are too indulgent or too harsh. They do not regard the children as defective; they think many of the things they do are done through pure meanness or are prompted by an evil spirit.

DR. R. R. KIME, Atlanta, said it is time the Medical Association of Georgia and the state at large should awaken to its duty along humanitarian lines. The epileptic or feeble-minded children are not responsible for their condition; they are brought into the world with defects they can not themselves eliminate, and physicians as representatives of one of the great professions of the state have a duty and responsibility resting on them which they can not shift without doing themselves an injustice. There is no class of defectives that need the sympathy and support of the medical profession, as well as the people of the state, more than the epileptic and feeble-minded.

Dr. Kime offered a resolution to the effect that the association endorse the idea of requesting the establishment of a state colony for epileptics and an industrial school for feeble-minded. This resolution was unanimously carried.

The Soda Fountain and Its Attendant Evils.

DR. J. A. COMBS, Locust Grove, read a paper on this subject. He finds that the soda fountain has nothing for which to commend itself either to the medical profession or to the public, but he thinks the following serious objections may be justly urged against it: It fosters the nostrum evil; it is a fruitful source of nervous and digestive disturbances; by its filthiness it may be and probably is the means of spreading infectious diseases. It offers opportunity for the illicit sale of whiskies and other narcotics. The powerful drugs dispensed in the "patent" or secret drinks create a thirst which leads to crime and disgrace. It affords opportunity for undesirable commingling of the sexes. It paves the way for the wine and beer garden, and at last for the saloon.

The Doctor in Relation to Exercise as a Factor in Medicine and Surgery.

DR. THEODORE TOEPEL, Atlanta, said the orthopedic surgeon needs exercise and massage in his corrective work. Lateral curvature of the spine is no longer treated by braces exclusively, but by gymnastics, sometimes in connection with other measures, it is true, but always by exercise in some form. The author explained the physiology of exercise and its therapeutic applications. He divided the system of exercise into passive, active and resistive, each division being discussed at length.

(To be continued.)

TENNESSEE STATE MEDICAL ASSOCIATION.

Seventy-fourth Annual Session, held at Nashville, April 9-11, 1907.

(Concluded from page 1372.)

Tuberculosis of Kidney.

DR. RICHARD DOUGLAS, Nashville, impressed on the general practitioner the importance of collective evidence and of a correct history in diagnosis. The patient, in 75 per cent. of the cases, is a woman between the ages of 20 and 40. Careful investigation will reveal the history of some rather protracted and unexplained illness, a decline in health for some months. Not infrequently the onset is more acute, and the febrile state is mistaken for some of the essential fevers, as in two of his patients. He called attention to polyuria, occurring particularly at night. The voiding of large quantities of clear urine is quite suggestive, indicating the stage of irritation which is followed later by congestion. If the urine is examined, microscopic quantities of blood will be found; but the characteristic of the hematuria in renal tuberculosis is a spontaneous occurrence of a quantity of free blood sufficient to be detected with the unaided eye. This bleeding is not induced by exercise or exertion; it merely marks the early stage of invasion of the kidney. Ureteral catheterization is not an essential, though a great aid to specific diagnosis. In 80 per cent. of the cases only one kidney is affected. Radical removal of the diseased kidney and ureter by lumbar nephrectomy should be undertaken at once, the condition of the patient permitting it. Nephrotomy or partial nephrectomy is dangerous.

Tuberculosis in the Negro.

DR. E. H. JONES, Murfreesboro, said that one feature with reference to tuberculosis in the negro race is that a large proportion of the cases are of the acute phthisic variety, running a rapid and fatal course, yielding little to the measures usually instituted. Those who are familiar with the habits of this race know their morbid proclivities for crowding around their sick and attending the funerals in crowded houses, illy ventilated, and not in the best of sanitary conditions. He believes that every house, tent or apartment used for dwelling purposes, when vacated, should be thoroughly disinfected before being occupied again. From observation, this is one of the most dangerous sources of contamination. This applies to public carriers, hotels, passenger trains, day coaches, sleepers, passenger boats and steamers, railroad stations, etc.

Lesions of the Prostatic Urethra and Their Reflex Neuroses.

DR. JERE L. CROOK, Jackson, said his attention was first directed to the prostatic urethra as a causal factor in neurasthenia and other neuroses about four years ago, when treating a college student for nightly seminal emissions. The history of the case was negative as to any form of venereal disease. The patient had practiced masturbation more or less. By means of a direct light urethroscope he found it easy to examine the entire urethra. Examination made after cocainizing the urethra and performing meatotomy disclosed a hyperemic area about one inch long in the prostatic urethra. This was extremely sensitive. The diseased patch included the point of entrance of the seminal duct. By the use of nitrate of silver solutions of varying strength he was enabled to cure the local conditions, and when this was done the other symptoms vanished. No other treatment was required. Since then he has successfully treated a number of cases according to this plan.

Surgery of Prostate.

DR. W. A. BRYAN, Nashville, said the method of removal of the prostate depends on the operator. The results of the suprapubic and the perineal routes are slightly in favor of the latter. The mortality of either is small compared with non-operative treatment. Fistulas are seen occasionally, but they do not usually persist long, and when they do, can usually be relieved by curetting away their lining. If they do persist, it is better to have a vent through two openings than one. Not every patient can stand a prostatectomy; then permanent drainage may be instituted, or, if preferable, a two-time operation may be executed after the suggestion of Chetwood. When the patient is very feeble he will improve by simply draining the bladder, either suprapubically or perineally. This may be done, and after a sufficient lapse of time, if the symptoms subside sufficiently, a complete removal of the gland may be done with a much lower mortality than would have been possible. Every step should be taken during the interim to assuage the infection of the bladder and kidneys and to build up the patient's resistance for the more serious undertaking. In all very old men it is preferable to do some minor operation, prolong life and relieve pain even if only with halfway comfort than to attempt the ideal treatment and fail. He condemned the partial excision of a large prostate in those patients whose condition warrants radical measures.

Suprapubic Prostatectomy.

DR. COOPER HOLTZCLAW, Chattanooga, described the technic and advantages of the suprapubic operation, and among other things said it requires no skilled assistants and no special instruments to do this operation. The only grave danger is entering the abdominal cavity. The whole operation need not take but a few minutes. If, however, the patient is old and feeble and exhausted by long and continued suffering and infection, the operation can be done in two stages. He most earnestly recommended this plan, as he had pursued it several times, opening the bladder under cocain anesthesia, letting the patient recuperate from all his troubles, and then in a week or two removing the prostate under general anesthesia. He uses no drainage tube. He seldom finds it necessary to irrigate the bladder. He lets the bladder wound heal slowly by granulation, which is usually accomplished in from four to six weeks, by which time the wounds in the bottom of the bladder will have healed and contracted, thereby making a complete and effectual exit to the urethra. He allows the patient to sit up in three or four days, when he can be taught to take care of himself. The lack of experience, the rapidity and facility of the operation, the freedom from hemorrhage and unpleasant sequelæ, the more perfect drainage and satisfactory results, all appeal to him in recommending this method of operating.

Researches in Rabies.

DR. WILLIAM LITTERER, Nashville, discussed the significance of the Negri bodies, the diagnosis of rabies, and then referred to his original experimental work. He said: (1) It is the consensus of opinion that the Negri bodies are the true etiologic factors in rabies. (2) They are living organisms belonging to the class of protozoa. (3) When found in smears or sections of the central nervous system, they are specific for this disease. (4) These bodies have never been found in other diseases than hydrophobia.

Recurrent Non-Malarial Hematuria.

DR. T. J. HAPPEL, Trenton, emphasized the necessity of careful diagnosis in differentiating the forms of recurrent nonmalarial hematuria. He said that the use of the microscope is most essential, because a careful examination will, in some cases, reveal the presence of some parasite other than the malarial hematozoon. The fact that some of these cases are cured by methylene blue may be taken as strong presumptive evidence that the condition is caused by the schistosoma hematobium.

Cancer of the Breast.

DR. W. D. HAGGARD, Nashville, pointed out the factors which influence the permanence of cure in operations for carcinoma of the breast. It may be stated as an axiom that cancer is an entirely curable disease when situated in an organ or tissue which of itself is completely removed without causing death, and if there is lymphatic involvement of the immediate tributary lymph glands, that they also are thoroughly removable. The younger the patient the worse the prognosis. In elderly persons, where there is a general atrophy of the lymph system and changes in all the vessels, dissemination is more slow. Cancer will remain local a longer period of time in the older patient, and the prognosis is better. The contraindications to operation were enumerated and the details of the operation described.

Other Papers Read.

The following papers were also read:

"Non-Infectious Sclerotic Ovary," by John A. Gaines, Nashville; "The Practical Use of Opsonic Treatment in Certain Specific Infections, Especially Those of the Skin," by Dr. J. M. King, Nashville; "Treatment of Fractures of the Hip," by Dr. C. N. Cowdon, Nashville; "Surgery of the Thyroid Gland," by Dr. Charles H. Mayo, Rochester, Minn.; "Foreign Bodies in the Larynx and Trachea," by Dr. M. M. Cullom, Nashville; "Headaches," by Dr. Hazel Padgett, Nashville; "Inversion of the Uterus; Reports of Two Cases," by Dr. B. V. Dickson, Covington; "True Croup (Non-Diphtheritic)," by Dr. Walter Dotson, Kempville; "Appendicitis," by Dr. R. J. McFall, Cumberland City; "Local Anesthesia," by Dr. Paul DeWitt, Nashville; "The Etiology, Pathology and Prophylaxis of Puerperal Eclampsia," by Dr. G. W. Moody, Shelbyville; "Report of an Unusual Case of Ununited Fracture of the Humerus," by Dr. Duncan Eve, Nashville; "The Differential Diagnosis of Multiple Neuritis and Muscular Atrophy," by Dr. D. R. Nell, Nashville; "An Ovarian Cyst Cast of the Abdominal Cavity," by Dr. Wm. D. Sumpter, Nashville; "Glaucoma," by Dr. J. T. Herron, Jackson; "Cerebrospinal Meningitis," by Dr. William McCague, Nashville.

Book Notices

DISEASES OF THE LUNGS. Designed to be a Practical Presentation of the Subject for the Use of Students and Practitioners of Medicine. By Robert H. Babcock, A.M., M.D., Consulting Physician to Cook County Hospital. Twelve Colored Plates and 104 Text Illustrations. First Edition. Cloth. Pp. 809. Price, $6.00. New York: D. Appleton & Co., 1907.

This is designed to supplement Dr. Babcock's book on "Diseases of the Circulatory System," and covers the subject of the diseases of the lungs rather thoroughly with the exception of the diseases of the pleuræ, to which are devoted but seventy of the 770 pages which comprise the text. The chapters on bronchitis are fairly complete, though necessarily abbreviated, particularly the one on bronchial asthma. In his preparation of the text of these chapters the author has relied largely on the writings of Hoffmann and of Lenhartz. In general, however, and be it added much to his credit, he has been not so much a searcher of medical literature as a student of individual patients.

The chapters on Acute Fibrinous Pneumonia are far better than the single chapter devoted to Acute Bronchopneumonia. Pulmonary emphysema seems to the reviewer rather slighted, inasmuch as it is of much clinical interest by reason of its frequent occurrence. For example, its relative importance demands a greater amount of space than is given to atelectasis and pneumonoconiosis. The best portion of the book by far is that which is devoted to pulmonary tuberculosis, and we are especially pleased to see the author's advocacy of infection as opposed to the old idea of hereditary predisposition. The chapter devoted to the physical signs and clinical varieties of pulmonary tuberculosis is the best chapter on physical diagnosis in the book. That devoted to the treatment of pulmonary tuberculosis embraces all of the modern methods in regard to the best way of managing this dread disease. The author is not so fortunate in his description of acute miliary tuberculosis, which includes less than three pages. This is by no means an uncommon infection and is less frequently diagnosticated than it should be. Surely, in comprehensive works like this one of Dr. Babcock's, more than fourteen lines should be given to the physical signs of acute miliary tuberculosis, yet that amount is all that appears in the text. Indeed, in general, one could wish that less space had been surrendered to symptomatology, so that more might have been left for physical signs.

Mechanically, the volume is well gotten up. The fact that the author mentions the names of physicians who have from time to time called him as a consultant, seems open to criticism. What benefit the names and home addresses of such physicians can be to the general reader is hard to estimate. In the interest of brevity, if for no other reason, these names should be omitted. The style of the book is excellent. Indeed, at times the author's elegance and fluency get the better of strength and force. Things which should stand out ruggedly are by the ease and flow of language so smoothed down that their relative importance is lost sight of. There is not a single epigram in the book for this same reason.

TUMORS, INNOCENT AND MALIGNANT, Their Clinical Character and Appropriate Treatment. By J. Bland-Sutton, F.R.C.S., Surgeon to and Member of the Cancer Investigation Committee of the Middlesex Hospital. Fourth Edition, with 355 Engravings. Cloth. Pp. 675. Price, $4.50 net. Chicago: W. T. Keener & Co., 1907.

This book, now in its fourth edition, is of value chiefly because of the interesting manner in which a varied clinical experience with tumors has been utilized in the presentation of the subjects discussed. In no sense, however, is the work complete, and it is far from being up to date. Histologic considerations are scanty and uninstructive, and the majority of the illustrations of microscopic sections are pathetically poor. The important features of tumor biology are entirely neglected, or discussed in a most superficial manner, and the author disregards almost entirely the essential features of histogenesis. A few references are attached to each chapter; but they are of little value, consisting of a most haphazard collection of articles, largely reports of single cases in British literature, while important contributions and bibliographic collections written in other lands are largely overlooked.

From the standpoint of the pathologist this book contains little that would cause him to recommend it either to elementary students or to men engaged in research. It does contain considerable information that will be found useful to the practitioner and surgeon, but the lack of completeness and its general superficiality will be at once evident to the man of much training and experience. A feature of value to the general practitioner is the method of considering the various sorts of tumors, particularly with reference to the different organs and tissues they attack, which enables one to readily acquaint himself with the relative prevalence of different sorts of tumors in each part of the body. Teratoid growths have received particular attention, as also have odontomas.

The defects are largely those of omission rather than of commission, for there are few erroneous statements; however, many good authorities would challenge the dictum that an adenoma never becomes transformed into a cancer (p. 267). One also occasionally notes with pleasure certain advanced ideas, e. g., the statement that "it would be convenient and perfectly justifiable to deprive myxomata of even the rank of species among tumors" (p. 60). The favorable results from local removal of giant cell sarcoma of bone, and the usual absence of true malignancy in this form of tumor, is also well brought out, although no reference is made to certain important contributions to this subject.

PROGRESSIVE MEDICINE, Vol. 1, March, 1907. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in Jefferson Medical College. Paper. Pp. 280. Illustrated. Per annum, in four cloth-bound volumes, $9.00; in paper binding, $6.00. Philadelphia: Lea Bros. & Co.

In this issue Dr. C. H. Frazier, in the Department of Surgery of the Head, Neck and Thorax, presents a complete review of the practical bearing of edema of the brain in early operations for intracranial injuries, and gives a résumé of 530 cases of fractures of the base of the skull. Among other topics discussed are the following: Results of thyroidectomy in over a thousand cases; a summary of 16 cases of suture of the heart; operations on the pituitary body; trifacial neuralgia; epilepsy and cerebral abscess. Dr. Robert H. Preble devotes considerable space to the part taken by insects in the transmission of various infectious diseases. Dr. Floyd M. Crandall discusses the incidence of disease in childhood; infantile mortality; the tonsil as a portal of microbic infection; hernia in young children; enuresis; infant feeding; the management of infants in hot weather, etc. The Department of Rhinology and Laryngology is covered thoroughly by Dr. D. Braden Kyle, and the Department of Otology by Dr. B. A. Randall. The latter reviews 645 cases of brain abscess. Dr. Kyle discusses the use of chlorid of sodium in the treatment of chronic laryngitis, and reports a case of inoperable cancer treated with a bacterial vaccine made from a micrococcus neoformans.

PEDIATRICS. The Hygienic and Medical Treatment of Children. By Thomas Morgan Rotch, M.D., Professor of Pediatrics, Harvard University. Fifth Edition, Rearranged and Rewritten. Illustrated. Half Leather. Pp. 1060. Price, $2.25 per volume. Philadelphia and London: J. B. Lippincott Co., 1907.

This work has been revised to bring it up to the standard required by recent advances in this department. This has necessitated the rewriting of a considerable portion of the book and the careful revision of the other articles. The book retains the practical as well as scientific character which rendered the previous editions so helpful to practitioners as well as to students. The illustrations have been increased by a number of new photographs and radiographs and one new colored plate.

A GUIDE TO DISEASES OF THE NOSE AND THROAT AND THEIR TREATMENT. By C. A. Parker, F.R.C.S., Surgeon to the Throat Hospital, Golden Square, London, W. With 255 Illustrations. Cloth. Pp. 624. Price, $5.00 net. New York: Longmans, Green & Co., 1906.

This work is for students and practitioners who take courses at special hospitals for diseases of the throat and nose, and is the outgrowth of the author's lectures at the Throat Hospital. Section I is devoted to methods of examination of the upper respiratory tract: local treatment, and the general principles governing operations in this region. Section II on complications of the upper respiratory tract in relation to general medicine, while Section III, nearly a third of the volume, is devoted to the nose. The use of the Heryng lamp for transillumination of the antrum is illustrated with a colored plate. On the subject of spurs and deviations of the septum the author gives an unbiased description of various operations, including several by American rhinologists. Diseases of the throat and larynx are grouped in two large sections of the work, which concludes with an appendix on the notification and isolation of fibrinous rhinitis.

EYE INJURIES AND THEIR TREATMENT. By A. Maitland Ramsey, M.D., Fellow of the Faculty of Physicians and Surgeons, Glasgow. Illustrated. Cloth. Pp. 210. Price, $6.00. New York: The Macmillan Company, 1907.

This book is based on the author's graduate course of lectures on this subject. He very modestly suggests in his preface that the book is suitable particularly for the general practitioner who requires a pithy presentation of cases, whereas it is a work that any ophthalmologist may read with profit. The main feature of the book is its purely clinical consideration of the various eye injuries with the appropriate treatment. The stock formulas of the Glasgow Ophthalmic Institution are given in an appendix. The book is very freely illustrated with colored plates and drawings and is printed in large type on heavy paper. Dr. Ramsey's large practical experience in the care of eye injuries makes his views invaluable and we heartily recommend his book.

TEXT-BOOK OF MATERIA MEDICA FOR NURSES, Including Therapeutics and Toxicology. By G. P. Paul, M.D., Attending Physician to Samaritan Hospital, Troy, N. Y. Cloth. Pp. 242. Price, $1.50 net. Philadelphia: W. B. Saunders Co., 1907.

Paul's materia medica for nurses is practical in that it deals chiefly with the indications and contraindications for the various drugs, and gives their doses. Part IV, on the "Newer Medicinal Agents," as it deals with the new synthetics, the use of which is not clearly defined, might well have been omitted. Part V, "Practical Therapeutics," deals with hydrotherapy, including baths, gastric lavage, enteroclysis and hypodermoclysis; hypodermic medication; antiseptics and disinfectants; disinfection; topical medication, including application of heat, stupes, poultices, cupping, counterirritation and rectal alimentation; antitoxins and serums.

TEXT-BOOK OF EMBRYOLOGY. For Students of Medicine. By John Clement Heisler, M.D., Professor of Anatomy in the Medico-Chirurgical College, Philadelphia. With 212 Illustrations. Third Edition. Thoroughly Revised. Cloth. Pp. 432. Price, $3.00 net. Philadelphia and London, W. B. Saunders Co., 1907.

In order to be in consonance with existing views, the text of this work has been revised thoroughly and in many instances whole chapters have been rewritten, such as the sections dealing with the ovum, the spermatozoon, blastodermic vesicle, the vascular system, ductless glands, pancreas, kidney, spinal cord, spinal column and the musculature. The text is concise and yet sufficiently full for a text-book to be used by the student as well as by practitioners. All the good features of the previous editions have been retained and many new ones added.

A SYSTEM OF SURGICAL NURSING. With an Appendix Containing Useful Formulas, Emergency Drill, Etc., by A. N. McGregor, M.D., F.F.P.S.G. Cloth. Pp. 554. Price 9s. net. Glasgow: David Bryce & Son.

A volume of more than 500 pages might be considered rather extensive for the elucidation of only one portion of the work of the nurse, but the book is well written, easy to read, well arranged, and, despite the size, not diffuse. It takes up systematically the qualifications of nurses, principles of surgical treatment, sepsis, asepsis, etc., general considerations of disease and repair processes, instruction in the practical details of ward work, preparatory and postoperative treatment of patients and working instructions.

ANATOMY FOR NURSES. E. R. Bundy, M.D., Member of the Medical Staff of the Woman's Hospital, Philadelphia. With a glossary and 191 illustrations, 34 of which are colored. Cloth. Pp. 252. Price, $1.75 net. Philadelphia: P. Blakiston's Son & Co., 1906.

This work is written in simple language and is fairly well illustrated. The chapter on foods and digestion seems slightly out of place in a text-book on anatomy and is so brief and superficial that it might well have been omitted.

Miscellany

Assay of **Pepsin.**—Cowie and Dickson (*Pharm. Jour.*, Feb. 23, 1907) worked out a new method of assay of pepsin which determines not simply its solvent power on albumin as in ordinary methods, but rather its actual peptonizing power, which they think is a better measure of its therapeutic efficiency. The process depends on the depth of color given by the biuret produced by the peptone formed in four hours from a given weight of dry albumin by a definite amount of the pepsin to be tested. The color is compared with a solution of potassium permanganate which corresponds in color with the biuret produced from a known weight of peptone. A control experiment must be carried out with the pepsin and water without the addition of albumin. The difference between the number of cubic centimeters required to match the color produced in the two tests corresponds to the amount of peptone actually produced by the digestive action of the pepsin. The method is recommended as giving results that are sufficiently near those obtained by standard methods to give a very good idea of the power of a pepsin. It can be carried out in a comparatively short time and requires no special apparatus. The authors have tried the xanthoproteic reaction by boiling the proteid with nitric acid and then adding excess of ammonia, but found it impossible to measure the differences between the depths of color by any standard yellow solution. At the meeting of the Pharmaceutical Society of Great Britain, at which this paper was read, Mr. Dott expressed doubts as to whether or not the solvent power of pepsin as given by the ordinary methods of assay did not represent the therapeutic efficiency nearly enough for practical purposes. Mr. Cowie said that it would be advantageous if a uniform process of assay were adopted by the various nations. As America supplies most of the pepsin used in Great Britain it is desirable, he said, that the British process should be similar to that of the U. S. Pharmacopeia.

An Injection **Fluid for Preserving Cadavers.**—An excellent injection fluid for preserving cadavers can be made of equal parts of alcohol, glycerin and melted phenol (carbolic acid) crystals. This fluid, the formula for which has been furnished us by Dr. Burton D. Myers, professor of anatomy in the Medical Department of the University of Indiana, is made as follows: White crystalline phenol is preferred though the straw-colored product will do just as well, but it is not much cheaper. Should the black crude phenol be used blue injection fluid must be used for the arteries, as red lead would be decolorized. White crystals do not seriously affect the color of the red lead. The alcohol should be used in about 95 per cent. solution. All the used 95 per cent. and 80 per cent. alcohol from the histology and neurology laboratories may be saved; this should be filtered and mixed with enough unused 95 per cent. alcohol for the injection fluid. The phenol costs from 23 to 24 cents a pound; the glycerin from 16 to 17 cents a pound, and the alcohol about 50 cents a gallon. The fluid of this formula thus costs about $1.42 a gallon. While this is, of course, more expensive than the arsenic and formalin compound, the advantages are well worth the difference in cost. It does not harden and stiffen the tissues as does formalin; there is never any infection from a cut received in the dissecting room, and the tissues, even the finger tips, toes, nose, etc., do not dry out even after weeks of exposure. When cadavers are brought in they are placed on a table and scrubbed; then, as there is no chance of decomposition, there is no odor except that of the phenol. The odor of decaying flesh, so common in dissecting rooms, is entirely absent, and the worst hindrance to good work has been removed.

A Medical **Senator Pleads in Favor of Absinthe in France.**—Belgium has recently prohibited the manufacture and sale of absinthe in that country, and some cantons in Switzerland have likewise taken drastic measures against it still more recently. The medical profession in France has long been striving to restrict the use of absinthe in France, and the group of medical members of the houses of parliament has been agitating the question with renewed energy during the last few months. The treasury department is strongly against any measure tending to reduce the present income from the internal revenue, and the minister at the head of the department does not hesitate to proclaim openly his hostility to any measure that would create at once a deficit of $12,000,000. An article in the *Presse Méd.*, page 137, remarks that more money is paid out annually to the hospitals, asylums and almshouses on behalf of the victims of absinthe than the entire revenue from this source amounts to. The superintendent of the Ville-Evrard asylum states that out of the average of 550 alcoholics annually in the institution, fully 90 per cent. are victims of absinthe. On the other hand, the representatives in parliament of a certain district where the manufacture of absinthe is the principal industry, are making a strong stand against its suppression. The senator from this district is a physician, and he admits that cheap absinthe is a vile poison, but proclaims that the absinthe made in his district is so pure and made of such delightful ingredients that high-grade, expensive absinthe like this should not be regarded as injurious. He says that the standard of health in his district is above the average and epilepsy is unknown, although every one drinks absinthe. He pleads earnestly for the few thousands of his voters who live by absinthe, forgetting the many more thousands who die by it every year—surely a very strange stand for a physician to take.

Erroneous Ideas About Poisonous Reptiles.—Popular opinion attributes to nearly all reptiles more or less poisonous properties. The more formidable or repulsive the reptile the more likely it is to be associated in the popular mind with the possession of venom. In the case of the Gila monster, investigation has failed to bear out the preconceived notion of its dangerous character. Although some evidence has been adduced of the occurrence of sickness and even death after the bite of this reptile, experiment has shown that its saliva is possessed of only very feeble toxic properties, and that it has neither poison glands nor fangs, so that it can not envenom a wound in the manner of the poisonous snakes. Dr. G. Goodfellow, in the *Scientific American*, March 30, 1907, refutes the evidence recently adduced to show the poisonous character of wounds inflicted by this reptile, especially in two cases occurring in Arizona with the history of which he states he is entirely familiar. The first patient died from acute alcoholic poisoning grafted on chronic alcoholism. The second patient had a very sore finger which resulted apparently from the cauterization and not from the bite. Dr. Goodfellow has himself been bitten by the monster, but has seen no consequences different from those usual in case of a lacerated wound. It is probable that some of these cases are aggravated by the unnecessary active local treatment and the injudicious dosing with alcoholic liquids. If Dr. Goodfellow's conclusions are correct, such wounds should be treated as ordinary lacerations; no special constitutional treatment is required.

Tapeworm from a Cat.—Pollak recently reported at a meeting of the local medical society in Vienna the case of a child of six months affected with tenia. For about 4 months small greenish, grayish objects, resembling cucumbers, about 1x2 cm. in size, had been observed in the stools, and the microscope revealed that they were links of the *Tenia cucumerina*, common in cats and dogs. The family had no cat or dog, but it was remembered that three weeks before the first appearance of the links in the stools the child had been taken to visit a friend and had lain on a bed with the friend's cat. There were no appreciable symptoms in the infant from the presence of the tenia. This form of tenia passes through the cysticercus stage in dog fleas and dog lice. Only 20 cases are on record of its invasion of man, but in most of these severe symptoms were observed, convulsions, and intestinal disturbances. In the affected animals it frequently induces diarrhea and fits or pseudo-rabies.

The Study of Dietetics.—The study of the association of foods in health as well as in disease is not only fascinating but extremely profitable to all concerned. A person without appetite may be induced to take the necessary nourishment if the attending physician is competent to suggest articles of diet which will appeal to the sense of taste, and this is a point not to be overlooked.—*Medical Times.*

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and methods of treatment for the diseases seen especially in every-day practice. Contributions will be welcomed from our readers.]

Dosage for Children.

YOUNG'S METHOD.

This is easily remembered and is a good rule for children over a year old. It is: Add 12 to the age and divide the age by the result. For example, for a child of 2:

$$\frac{2}{2+12}=\frac{1}{7}.$$

COWLING'S METHOD.

According to this method the dose for a child is obtained by dividing the number of the following birthday by 24. For example, at 2 years: $3 \div 24 = 1/8$.

CLARK'S METHOD.

This rule, although accurate, is not very practical. According to Clark, the proper dose is in proportion to the weight of the individual. Assuming 150 pounds as the average weight for which the dose is 1, then the proper dose will be in the same proportion to 1 as the patient's weight to 150. Therefore, if the weight be divided by 150, the resulting fraction represents the proper part of 1 for the dose in that particular case. For example: The proper dose for a baby of 10 pounds would be 1/15 ($10 \div 150 = 1/15$).

Administration of Hypnotics in Tablets.

The tablet as a form for the administration of medicines has many advantages since it combines exactness of dosage, convenience in handling and pleasantness in administration. It is apt to be forgotten, however that all medicines can not be used in this form. Very volatile drugs are manifestly excluded, and salts which irritate the stomach should not be administered in tablet form, unless the tablet is first crushed and dissolved. Difficultly soluble drugs may escape absorption altogether, or their action be much delayed if given in tablet form. The varying degree to which the compression is carried permits of marked variations in the readiness of disintegration and accounts for many variations in the action of the same remedy. It is not an uncommon experience for tablets to be found unchanged in the feces. When a drug is insoluble there is no occasion for administering it in tablet form unless for sake of convenience. In such a case the patient should be instructed to crush the tablet to a powder before taking it.

W. Kohn (*Medizinische Klinik*) calls attention to the disadvantages of the tablet in administration of hypnotics. It is important for the success of a hypnotic that it be promptly absorbed, and this can best be secured by giving it in solution. The difficult solubility of several of these remedies requires that special precautions be taken to secure solution. It the medicine be taken into the stomach in a tablet it is apt to remain some time undissolved, and hence unabsorbed and inactive, even if a quantity of warm water be taken after it. The remedy may be so gradually absorbed that its hypnotic effect may not appear, the preliminary stage of excitement only being reached. The frequent experience that a remedy does not act until the next day or the succeeding night is probably due to imperfect solution of the drug.

Another accident that may arise in consequence of the irregular absorption of medicines in tablet form is cumulative action. Kohn believes that the unfavorable results noted by some observers in the use of hypnotics arise from the fact that an additional and perhaps increased dose was given before the first had been excreted, although due time had been allowed to intervene between the doses. Kohn has found by experience that the administration of a hypnotic in solution secures a quicker effect and as the medicine is all absorbed in a short time, the occurrence of a tired feeling on awakening is avoided. Another advantage is that the desired effect can be obtained with a smaller dose—four-fifths as large an amount generally being sufficient.

Laxatives, Cathartics and Purgatives.

The following formula for a laxative pill is recommended by Shoemaker:

℞. Extracti rhei
Pulveris jalapæ comp., āā.....gr. xx 1.3
Hydrargyri cum creta.....gr. xl 2.6
Extracti belladonnæ fol.....gr. iv .26

M. Ft. pilulæ No. xx. Sig.: One pill at bedtime.

In acute nephritis Croftan recommends evacuating the bowel with castor oil or cascara sagrada. From 2 to 8 grains (0.12-0.5) of the extract of cascara may safely be given, or of the fluid extract from 10 to 15 minims (0.6-2.). In this disease Croftan states that saline purgatives must be avoided, as most salts irritate the kidneys or are eliminated with difficulty by the kidneys when these organs are diseased. He asserts that calomel and all drastic purgatives should be used only as extreme measures in emergency cases.

When a simple laxative is necessary the elixir of cascara sagrada (Elixir rhamni purshianæ, N. F.) is very efficient.

℞. Fluidextracti rhamni purshianæ aromatici
Elixir aromatici, āā.....f℥i 30

M. Sig.: One teaspoonful at bedtime.

When a more powerful preparation is needed, the compound elixir of cascara (Elixir rhamni purshianæ compositum, N. F.), may be used.

℞. Fluidext. rhamni purshianæ aromatici..f℥ii 8
Fluidextracti sennæ.....m. xlviii 3
Fluidextracti juglandis (N. F.).....f℥i 4
Elixir aromatici .....f℥xii 48

M. Sig.: One teaspoonful at bedtime.

The above prescriptions are useful in the constipation of pregnancy in which saline cathartics are seldom indicated. In these cases pills of belladonna, aloin and strychnin may also be used. The National Formulary contains formulas for several such pills:

℞. Aloini .....gr. 1/2 .03
Resinæ podophylli.....gr. 1/8 .008
Extracti belladonnæ fol.....gr. 1/4 .01

Ft. pilula. Sig.: One such pill as often as necessary.

℞. Aloini .....gr. 1/5 .012
Strychninæ .....gr. 1/120 .00054
Extracti belladonnæ fol.....gr. 1/8 .008

Ft. pilula. Sig.: One such pill at bedtime when necessary.

℞. Aloini .....gr. 1/5 .012
Strychninæ .....gr. 1/120 .00054
Extracti belladonnæ fol.....gr. 1/8 .008
Extracti rhamni purshianæ.....gr. 1/2 .03

Ft. pilula. Sig.: One such pill at bedtime when necessary.

For children calomel and the syrup and tincture of rhubarb answer the purpose in most cases. If castor oil is particularly indicated H. B. Sheffield, New York, recommends the following emulsion:

℞. Olei ricini .....f℥i 30
Olei menthæ piperitæ.....m. v .3
Sacchari .....℥i 4
Mucilaginis acaciæ
Aquæ, āā, q. s. ad.....f℥ii 60

M. et ft. emulsum. Sig.: From 2 to 4 teaspoonfuls at a dose, according to the age of the child.

Sheffield states that Rochelle salts with a little aromatic spirits of ammonia, glycerin and water constitute a pleasant mixture. Podophyllin and aloin, he states, are best prescribed in suppositories of cacao butter. This authority also says that it is well to remember that an enema often obviates the necessity for drugging.

The following has been recommended in obstinate constipation:

℞. Fluidextracti rhamni purshianæ.....f℥i 30
Fluidextracti belladonnæ.....f℥i 4
Tincturæ nucis vomicæ.....f℥ii 8
Syrupi
Aquæ, āā, q. s. ad.....f℥iv 120

M. Sig.: One teaspoonful thrice daily.

The following pills have also been recommended:

R. Extracti colocynthidis comp.....gr. xii		78
Extracti belladonnæ fol.....gr. ii		13
Extracti gentianæ.....gr. vi		4
Olei cari.....gtts. iii		19

Ft. pilulæ No. vi. Sig.: One pill at bedtime.

R. Resinæ podophylli.....gr. ii		13
Quininæ sulphatis		
Extracti aloes, āā.....gr. viii		5
Fellis bovis.....gr. xvi	1	04

Ft. pilulæ No. vi. Sig.: One or two pills at bedtime.

Potter recommends the following castor oil emulsion for children:

R. Olei ricini		
Glycerini, āā .....f℥i	30	
Tincturæ aurantii f3ii	8	
Tincturæ senegæ f3i	4	
Aquæ cinnamomi q. s. ad.....f℥iv	120	

M. Ft. emulsum. Sig.: One or two tablespoonfuls for children, according to age. For adults: From two to four tablespoonfuls.

Asthma in Infants and Children.

Cautley, in the *Clinical Journal*, London, states that the prophylactic treatment consists in bringing up predisposed children in the most suitable manner as regards hygiene, diet and prevention of catarrhal conditions. The body should be kept warm and the apartments cool. A high dry air (mountain region) is more suitable for these patients than the seaside. When there is much catarrh, however, it is more important to choose a warm dry climate, or seaside air and sandy soil, with the object of benefiting the catarrh. High altitudes are unsuitable for emphysema.

The diet should be simple and nutritious and should consist of small regular meals, avoiding all meat extracts and excess of carbohydrates. Fruit may be given liberally. The bowels should be kept open.

All local sources of irritation should be attended to, and adenoids or enlarged tonsils should be removed.

During a paroxysm of spasmodic asthma a warm bed in a room with open windows may be all that is necessary in mild cases. In more severe ones some of the following methods may be adopted: In order to induce general vasodilation give a hot-water or vapor bath; apply hot fomentations or turpentine stupes to the chest; administer nitroglycerin, nitrites, or inhalations of amyl nitrite; or give chloral by mouth or rectum; or give alcohol. Constriction of the respiratory mucosa can be induced by inhalation of cold air from ice in a jug or inhaler; adrenalin, 1 in 1000; the fumes of brown paper, nitre paper, the leaves of stramonium, or belladonna or hyoscyamus.

Most of these remedies are irritating, unsuitable and injurious in the catarrhal asthma of infants, in which more benefit is derived from the inhalation of terebene or creosote.

An emetic is often useful at the onset of an attack, and for this purpose the syrup or the wine or powder of ipecacuanha can be given. In older children, unable to swallow, one-tenth of a grain (0.006) of apomorphin may be given subcutaneously. Emetics help the child to get rid of mucus and also act as cardiac depressants. Other remedies which may be mentioned are belladonna by the mouth and atropin or pilocarpin subcutaneously, counter-irritants to the chest, dry cupping, and occasionally bleeding. Morphin, administered subcutaneously, is useful in bad attacks, but should very rarely be employed for children.

For the prevention of the nocturnal paroxysms antipyrin, acetphenetidin (phenacetin) or bromids may be given at bedtime.

Between the attacks treatment must be directed to the general health. A course of potassium iodid or syrup of the iodid of iron and cod-liver oil, is advisable. Arsenic is beneficial in cases in which there is a tendency to glandular enlargement, while strychnin and cinchona form useful tonics. Cauterization of the nose is another measure which may be tried in this condition.

As a general principle it is infinitely more important to attend to the general health of the child, to prevent erroneous methods of feeding, to remove local sources of irritation, and to cure the catarrhal tendency, than it is to rely on measures for relieving or cutting short the paroxysms.

Medicolegal

Towns Can Not Remove Members of Boards of Health.

The Supreme Judicial Court of Massachusetts, in the case of the Attorney General vs. Stratton and others, a proceeding in the nature of quo warranto to require the respondents to show by what warrant and authority they exercised the office of members of the board of health of the town of Swampscott, holds that it could not be maintained. It says whatever the rule may be in reference to municipal corporations in other parts of the country, it is of the opinion that, in the cities and towns of Massachusetts, there is no power to remove public officers except that which is given by the statutes. In Massachusetts the election of public officers, their removal from office and the filling of vacancies have been the subject of elaborate legislation. But there is no provision for the removal of members of the board of health in towns. In the absence of any such provision the court is of the opinion that they can not be removed by a vote of the town, either with or without a hearing before the town or a committee thereof.

Damage for Injury Causing Loss of Bowel Control.

The Court of Appeals of Kentucky says, on the appeal of Louisville Railway Company vs. Bohon, a personal injury case brought by the latter party, that the plaintiff testified that, after she had been thrown to the ground while attempting to alight from a street car, she was confined to her bed about two weeks; that the physician visited her during this time quite frequently; that she was injured, not only by a cut in her scalp, but that there was an injury to her spine, affecting the lower portion thereof, and that at the time of the trial—which was a year or more after the date of the injury—she was still suffering from the effects of the injury. Her physician testified that he had visited her and prescribed for her at her home and at his office 50 or more times during the course of that year. He further testified that the injury was such as to leave her in a most distressing and unfortunate condition: that the injury to her back so affected the nerves of the back as to produce partial paralysis thereof, and caused her to lose control of her bowels, and that this trouble was traceable directly to the injury; that he had been her family physician for some seven years or more, and that she had no other injury than the one occasioned by the fall from the car, so far as he knew; that for some time after the injury the nerves controlling the bladder were also affected, but that at the date of the trial she had in a measure recovered from this trouble, but that she was still unable to control her bowels. The trial resulted in a verdict of $3,000 for the plaintiff, and the judgment therefor is affirmed. As to whether this injury was permanent or not, the court states that it can not say, but that even if it was not, it is of the opinion that the damages awarded were not excessive.

Proving Being Physician in Action for Services.

The Supreme Court of Montana says that the case of Leggat vs. Gerrick was brought to recover a balance of $100 for professional services rendered for the defendant, by the plaintiff, a physician. The physician obtained a judgment in the district court, which is affirmed, although it was urged that the evidence was insufficient to sustain the decision of the lower court, in that there was not any evidence offered on behalf of the plaintiff to show "that the plaintiff holds a certificate granted by the state medical board of the state of Montana, entitling him to practice medicine."

If the fact affirmatively appeared that, at the time the services were rendered the plaintiff did not have a certificate, then, the Supreme Court says, the question of his right to recover would be raised directly. But, as that fact did not

appear, the only question presented here was: On whom rested the burden of proof? Was the burden on the plaintiff in the first instance to show that he had such certificate, or was it on the defendant to show that he did not have it?

The testimony given at the trial on behalf of the plaintiff by a witness named Kremer was: "I knew Dr. Leggat at that time, and I can state that I knew him to be a physician and surgeon in the city of Butte, and at that time was the city physician." In view of this testimony, the Supreme Court thinks that the presumption followed that Dr. Leggat had complied with the law, and that the burden of proof was on the defendant to show that he had not done so. And, in the absence of any attempt on the part of the defendant to make this proof, the court thinks the evidence was sufficient to sustain the decision of the lower court.

The Supreme Court says that after a careful review of the authorities the Court of Appeals of Illinois, in Williams vs. People, 20 Ill. App. 92, said: "Where the question of license or qualification of a physician arises collaterally in a civil action between party and party, or between the doctor and the one who employed him, then the license or due qualification under the statute to practice will be presumed. McPherson vs. Cheadell, 24 Wend. (N. Y.) 15; Thompson vs. Sayre, 1 Denio (N. Y.) 175; Pearce vs. Whale, 5 Barn. & Cres. 758." The reason for the rule is stated by the same court in the City of Chicago vs. Wood, 24 Ill. App. 40, as follows: "The reason why the license will be presumed where there is no evidence to the contrary, rests on the principle that, when an act is required by positive law, to be done, the omission of which would be a misdemeanor, the law presumes that it has been done, and therefore the party relying on the omission must make some proof of it though it be a negative."

While there is some conflict in the decisions, the decided weight of authority seems to be in favor of the rule stated above in Williams vs. People. McPherson vs. Cheadell, 24 Wend. (N. Y.) 15; Jo Daviess County vs. Staples, 108 Ill. App. 539; Lacy vs. Kossuth County, 106 Iowa, 16; Dickerson vs. Gordy, 5 Rob. (La.) 489; Lyford vs. Martin, 79 Minn. 243; Cather vs. Damerell (Neb.) 99 N. W. 35; Rider vs. Ashland County, 87 Wis. 160; Good vs. Lasher, 99 Ill. App. 653.

The same general rule is recognized by the Court of Appeals of Indiana in Cooper vs. Griffin, 13 Ind. App, 212, but, by reason of a special statute in that state, the contrary rule is upheld.

A somewhat analogous question is presented in an action brought in a court of this state (Montana) by a foreign corporation. It has been held that it is not necessary for the foreign corporation to prove, in the first instance, that it has complied with the laws of this state entitling it to do business here.

Nor does the Supreme Court think that the trial court erred in allowing interest on the amount recovered, its action appearing to be warranted by section 4280 of the Civil Code of Montana, which provides: "Every person who is entitled to recover damages certain, or capable of being made certain by calculation, and the right to recover which is vested in him on a particular day, is entitled also to recover interest thereon from that day, except during such time as the debtor is prevented by law, or by the act of the creditor, from paying the debt"—and by the construction given to that section by this court in Hefferlin vs. Karlman, 29 Mont. 139.

Liability of Hospitals and Others for Negligence in Charity Cases—Case of Patient Paid for by County.

The Supreme Court of Utah says that the case of Gitzhoffen vs. Sisters of Holy Cross Hospital Association was brought to recover damages alleged to have been sustained by the plaintiff through the defendant's negligence while he was an inmate of its hospital. The evidence on the part of the plaintiff tended to show that when he was admitted to the hospital he was suffering from gonorrheal conjunctivitis in the second, or purulent stage, and should have had his eyes cleansed every 20 minutes, which was not done, in consequence of which total blindness resulted in the left eye, and the sight of the right eye was so impaired as to amount to substantial blindness. The county paid the defendant for taking care of the plaintiff 41 days, $41.

The great weight of authority is, the court says, that a charitable institution or corporation is not liable for the negligent acts of its nurses or other employés, if it has not been guilty of negligence in selecting them. To a corporation organized for profit the doctrine of respondeat superior (the superior or master must answer) fully applies, and the corporation is made liable for the negligent acts of its employés done in the discharge of its business and within the scope of the servants' employment.

In this case, however, it was in effect urged that, notwithstanding the general character of the defendant as to its being a corporation for gain, nevertheless the actual relation existing betwen it and the plaintiff was merely charitable, and hence the same principle of the law should be applied to the case as is applied to charitable institutions, only making it liable for its negligence in the selection of the nurse. This position was taken from the assumed facts that the plaintiff was an indigent person, a charge on the county, and as such was placed by it in the hospital for treatment for which payment was made by the county, the plaintiff paying nothing and not agreeing to pay anything. As stated by counsel for the defendant in his brief: "There was no contract between plaintiff and the defendant. The contract for his admission to the hospital was between the county, whose charge he was, and the defendant. Under the contract between the county and the defendant, plaintiff, having been sent there, had a right to be in the hospital and to be treated as a patient."

If one, through mere kindness or charity, admits a sick or wounded person to his house to administer aid and comfort to him, and for such purpose selects a physician or servant to attend him, undoubtedly he ought not to be held, nor does the law hold him, liable for the negligence of the physician or servant, unless, as the authorities say, he has been guilty of negligence in the selection of the physician or servant. And, had the defendant so received the plaintiff, and not otherwise, it could not be held liable in any greater degree.

But, if one receives another into his house for the purpose of treating him, and assumes and undertakes to do so, though it may be done gratuitously, there is some force to the position that he should be held liable for the negligence of his servant in the discharge of the duties undertaken and assumed by him, on the principle of law that, if a person actually undertakes and enters on the execution of a particular work, it is his duty to use reasonable care in the manner of executing it, whether done by himself or through his servants. Applying the principle, there is force to the argument that the defendant, having received the plaintiff into its hospital, and having assumed and undertaken to treat him, it thereby assumed the duty of using reasonable care in so doing. But the court need not, and does not, rest the determination of the case on this principle.

It was alleged in the complaint that the defendant received the plaintiff into its hospital for hire. The defendant in its answer, while denying that it received the plaintiff under any direct contract or agreement with him, yet admitted that it received him for treatment under a contract with the county for which it was paid by the county. The admission had the effect of precluding the defendant from making the claim that the plaintiff was received and treated by it through mere charity, for the court can not well see how the defendant could admit that it received the plaintiff for treatment under contract with the county for hire, and then claim that it received the patient gratuitously. No claim was made that the payment received by it was not made or received as compensation, but only as a donation or contribution to the defendant determined by the ability of the patient or the county to give, and not on the value or cost of services rendered.

If the defendant agreed with the county to receive the plaintiff for treatment for a price which the county was willing to pay, and the defendant to accept, the court can not see what difference it made that the relation between the county and the plaintiff was charitable, any more than if an individual through mere kindness toward the plaintiff had contracted

with the defendant for his treatment and care. While, therefore, the relation between the plaintiff and the county may be said to have been merely charitable, the relation between the defendant and the plaintiff nevertheless was not so. That a contract may be entered into between two persons for the use and benefit of a third person, and that such third person may maintain an action thereon, although the promise or contract was made without his knowledge and without any consideration moving for him, is well settled in this jurisdiction.

While it may be said that this was an action of tort, and not on contract, nevertheless, in such an action, a plaintiff seeking to recover for injuries sustained by him through the negligence of another must show that the latter committed a breach of some duty owing to the plaintiff or imposed for his benefit. To show what that duty was, it was proper to aver and prove the relation existing between the parties. As tending to show a duty owing from the defendant to the plaintiff, it was proper to aver and prove that the defendant had received him under contract for a consideration, and as tending to show what it was that the defendant had assumed and undertaken to do. For, it may well be said that, if the defendant had received the plaintiff as a mere object of charity, then it owed him no duty, except perhaps the exercise of care in the selecting of a physician or nurse, if it had undertaken to do so. If, on the other hand, it received him for treatment under a contract for pay, and undertook and assumed to treat him, then it owed a duty not only to exercise reasonable care in the selection of a nurse, if it had undertaken that duty, but also the duty to use reasonable care in the giving of the treatment and the doing of that which it had agreed and assumed to do. If the defendant agreed with the county to receive and treat the plaintiff for pay, the court can not see on what principle it did not owe him the same duty in the premises as if it had directly made the agreement with the plaintiff to receive and treat him for pay.

Neither by the pleadings nor the evidence was there presented a case of rendering services out of mere charity, but one of rendering services for pay by the defendant, a non-charitable corporation, and hence it must be held liable for the negligent acts of its servants done in the scope of their employment.

On the alleged acts of negligence, the court thinks the evidence was sufficient to require the case to be submitted to the jury for their finding.

As to the condition of the plaintiff's eyes at the time of his admission to the hospital, the yielding of the disease to treatment, the physician in charge of the plaintiff, the directions given by the physicians to the defendant and its nurses with respect to the treatment, and as to what transpired at the hospital, the evidence was conflicting. The case ought to have been submitted to the jury; and the trial court erred in not submitting it.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

April 13.

1 Treatment of Acute Cardiac Affections in Childhood. A. Baginsky. Berlin
2 Local Thermotherapy. W. G. Thompson, New York.
3 Aneurism of the Arch of the Aorta. G. L. Peabody, New York.
4 *Diagnosis of Early Pregnancy. L. J. Ladinski, New York.
5 Symptomless Mastoiditis Followed by Meningitis and Death. A. B. Bennett, Washington, D. C.
6 *Prolapse of the Rectum. J. K. Hall, Morganton, N. C.
7 Aspiration in Otitis Media Acuta. P. R. Wood, Marshalltown, Iowa.
8 Arrested Mental Development. H. Richardson, Baltimore.

4. **Diagnosis of Early Pregnancy.**—Ladinski claims that the diagnosis is made by the appearance of a spot of peculiar softness and elasticity just above the junction of the body and the cervix in the anterior wall of the uterus, in the fifth or sixth week. When the uterus is retroverted and retroflexed it appears in the posterior wall and at the sixth or seventh week of pregnancy. In incomplete abortion or subinvolution this area of softness appears, but is much more doughy and less elastic. With a hard fibroid in the upper portion of the uterus there is a similar spot, but the softness is only relative. With a soft myoma in the center of the uterus the feeling is exactly that of pregnancy. The sign must be sought by bimanual palpation. Absence of this sign absolutely excludes uterine pregnancy. The sign aids in making a positive diagnosis of extrauterine pregnancy by excluding uterine pregnancy. Ladinski suggests that it is in all probability due to extreme vascularity of the uterine wall at the point where it is felt.

6. **Prolapse of Rectum.**—Hall reports a case of very large rectal prolapse, in which a successful operation was done by attaching the sigmoid flexure to the anterior abdominal wall on the left side. The muscular bands of the colon were very strongly attached to the surface of the peritoneum near the abdominal incision so as to produce strong adhesions. The patient was not allowed up for a month or more.

Boston Medical and Surgical Journal.

April 11.

9 Biography of Michel Servetus, the Discoverer of the Pulmonary Circulation. C. G. Cumston, Boston.
10 *Empyema and Abscess of the Lung as Sequels of Acute Suppurative Appendicitis. H. Gage, Worcester, Mass.
11 *Operative Treatment of Hemorrhoids. T. C. Hill, Boston.
12 *Hemorrhoids and Their Treatment. C. S. Gilman, Boston.
13 Studies in Psychopathology. (Concluded.) B. Sidis, Brookline, Mass.

10. **Sequels of Suppurative Appendicitis.**—Gage reports two cases in which suppuration in the thoracic cavity followed shortly after an attack of appendicitis. The first patient, a man, 45 years old, presented all the signs and symptoms of effusion in the lower part of the right chest. Four ounces of pus, dark brown in color and of distinctly fecal odor, were evacuated. On further questioning it developed that three weeks previously the patient had manifested the characteristic symptoms of appendicitis. The second patient was a child, 6 years old. An appendiceal abscess was opened, the appendix removed and the wound drained. There was no evidence of abdominal infection, and the patient progressed nicely until the third day, when he developed a right-sided pneumonia. In the course of a week both physical and constitutional signs disappeared and the child was sitting up in bed. The temperature then returned, associated for the first time with abdominal pain and tenderness. The boy died 31 days after the appearance of these symptoms. At the necropsy there was found an abscess of the right lung, pus in both pleural cavities, and a general suppurative peritonitis, chiefly noticeable in the upper part of the abdomen. The region about the cecum showed no evidence of fresh infection. The stump of the appendix was thoroughly healed and not even injected. In another case the left side of the thorax was involved primarily from the extension of an abscess in the subphrenic region on the left side. The patient was operated on five days after the onset of the disease and a perforated gangrenous appendix was removed. In three other cases of abscess of the lung no surgical interference was attempted, with the result that two patients recovered and one died.

11. **Operative Treatment of Hemorrhoids.**—Hill believes that the ligature operation should be chosen when local anesthetics are employed; this is the form of anesthesia which he prefers and uses whenever possible.

12. **Id.**—Gilman agrees with Hill with regard to the use of the ligature and local anesthetics.

New York Medical Journal.

April 13.

14 *Lesions of the Middle Ear Due to Influenza. G. Bacon, New York.
15 Occurrence of Atypical Phagocytic Cells in Circulating Blood. M. W. Rowley, Boston.
16 *Two New Dressings for Fractured Clavicle. R. Bellamy, New York.
17 Unsuccessful Aneurismorrhaphy for Abdominal Aneurism. J. C. Munro, Boston.
18 *Diagnostic and Prognostic Value of Enumeration of the Nuclei of the Neutrophilic Leucocytes, and their Relative Phagocytic Power. D. M. Kaplan, New York.
19 Renal Congestion and the More Common Forms of Nephritis Unaccompanied by Pyuria. W. G. Vincent, New York.
20 Premature Detachment of Normally Situated Placenta. W. R. Nicholson, Philadelphia.
21 Milk as a Carrier of Infection. C. Harrington, Boston.

14. **Middle-Ear Lesions Due to Influenza.**—Bacon believes that influenza plays a very important part in acute inflammation of the middle ear. Mastoiditis is a most frequent complication, and next come septic thrombosis of the sigmoid sinus and primary phlebitis and thrombosis of the jugular bulb.

16. **Fracture of Clavicle.**—Bellamy describes a first-aid and a permanent dressing for fractured clavicle which he has employed successfully in a large number of cases. His description is accompanied by numerous illustrations, hence it is necessary to refer the reader to the original article.

18. **Clinical Value of Nuclear Enumeration.**—Kaplan found that the mononuclear neutrophile is capable of carrying more staphylococci than are the multinuclear forms, and that the four-nuclear forms carry least of all.

Lancet-Clinic, Cincinnati.

April 13.

22 *Operation for Hypertrophy of Prostate. B. Lewis and C. E. Burford, St. Louis.
23 Endonasal Surgery. A. B. Thrasher, Cincinnati.

22.—See abstract in THE JOURNAL, Dec. 1, 1906, page 1850.

St. Louis Medical Review.

April 6.

24 Case of Rigid Spine. W. W. Graves, St. Louis.
25 Additions to Our Knowledge of the Chancre and Primary Stage of Syphilis. J. Grindon, St. Louis.
26 Manifestations of Secondary Syphilis. C. D. Scott, St. Louis.
27 Marcelin Berthelot. G. D. Hinrichs, St. Louis.

Journal of Medical Research, Boston.

March.

28 Preservation of Neutrality in Culture Media with Aid of Phosphates. L. J. Henderson and H. B. Webster, New Haven, Conn.
29 Elastic Tissue of Carcinomata. G. McConnell, St. Louis.
30 *Absorption from the Peritoneal Cavity. Parts VI and VII. B. H. Buxton, New York.
31 *Pathology of Brown-Tail Moth Dermatitis. E. E. Tyzzer, New Haven, Conn.
32 Trypanosomes of the Trumpeter Hornbill. J. E. Dutton, J. L. Todd and E. N. Tobey, England.
33 *The Uricolytic Enzyme. A. E. Austin, Boston.
34 *B. Coli Communis*, "The Presumptive Test," and the Sewage Streptococci in Drinking Water. D. Rivas, Philadelphia.
35 Lesions of the Granule Layer of the Human Cerebellum. E. E. Southard, New Haven, Conn.
36 Occurrence of Oxidative Ferments in a Melanotic Tumor of the Liver. C. L. Alsberg, New Haven, Conn.
37 Fatty Tumor of Kidney Suggesting a Metamorphosis of Adrenal Cells into True Fat. C. B. Keenan and E. W. Archibald, Montreal, Canada.

30. **Absorption of Peritoneal Cavity.**—Buxton's article may be summarized as follows: Bacteria, when injected into the peritoneal cavity even in minute doses, reach the circulation in a few minutes by way of the lymphatics of the diaphragm. If these results are applied to man, then the Fowler position is indicated to avoid a rush of bacteria toward the diaphragm, and flushing of the abdominal cavity is not indicated. Rabbits frequently die from acute intoxication in about two hours after injection into the peritoneum of living typhoid bacilli. May not, then, asks Buxton, many deaths from shock after operation for perforation accompanied with irrigation be due to a similar cause?

31. **Brown-Tail Moth Dermatitis.**—Tyzzer says that the lesions are produced by the penetration into the epidermis of peculiarly modified microscopic hairs, the nettling hairs, which are sharply pointed and barbed. The other hairs of both the caterpillar and the moth do not produce any dermatitis. The nettling hairs, which from their shape are perfectly adapted for penetration, possess in addition an irritating substance which is undoubtedly an important factor in the production of the dermatitis. This substance may be destroyed by heating the nettling hairs at 115 C., or it may be extracted from them by certain solvents, such as dilute solutions of alkalies, at room temperature or water heated to 60 C. Nettling hairs inactivated by either of these measures produce no more than a slight redness when rubbed into the skin, and probably act then merely as foreign bodies. The dermatitis produced by the nettling hairs is of two types, dependent on the number of these elements penetrating a given area. The severe type is usually due to actual contact with caterpillars; the milder scattered rash is due to nettling hairs blown in the air and lodging on the skin or on the undergarments as they hang drying. The pathologic process in the skin consists of necrosis of the epidermal cells around the nettling hairs, the formation of spaces or microscopic vesicles in the epidermis at the site of injury, and inflammatory changes about the vessels of the corium. (See editorial comment, page 1436.)

33. **Uricolytic Enzyme.**—The results of Austin's investigation may be summed up as follows: All alkalies, even the weaker ones, at brood oven temperature split uric acid, an action which almost invariably increases as the temperature rises. The destructive action of the alkali used for the solution of uric acid is not uniformly increased by the addition of organic extracts isolated by the method of Rosell, which is supposed to isolate an active enzyme if such exists. Among the products of splitting by both the alkali alone and the alkali in conjunction with organ extracts, oxalic acid is rather uniformly found, urea and allantoin not at all. It is very difficult to isolate an extract of organs which does not contain purin bases, which are readily converted to uric acid at brood oven temperature by xantho-oxydase, thereby obscuring the results obtained by isolation of the remaining acid. There is no evidence of the reversible action of uricolytic enzyme if such exists. Unless some solvent other than an alkali is found for uric acid, it will be difficult to separate the destruction action of the alkali from that of any enzyme which may be present.

American Journal of Urology, New York.

March.

38 Hematuria of Chronic Nephritis. A. L. Chute, Boston.
39 *Patient with Renal Calculi Developing the Stone-passing Habit. E. L. Elsner, Rochester, N. Y.
40 Urethral Hemorrhage. F. C. Valentine and T. M. Townsend, New York.

39. **Stone-Passing Habit.**—Elsner reports the case of a woman, aged about 30, who had what he called the stone-passing habit. She passed renal calculi for a period of two years. During that time she had 405 attacks of colic and passed 518 stones, 415 of small size, 43 medium sized and 60 large-sized stones. Not included in the total of stones were 200 or 300 small pieces and a considerable amount of fine sand.

Washington Medical Annals, Washington, D. C.

March.

41 Diphtheria, Croup and Allied Affections, with Special Reference to Intubation. W. A. Wells, Washington.
42 *Fractures of Shaft of Femur. C. S. White, Washington.
43 *Case of Extensive Injury of the Cornea. R. S. Lamb, Washington.
44 Treatment of Chronic Diseases of the Heart. T. Schott, Nauheim, Germany.
45 *Phenol in Erysipelas. B. M. Randolph, Washington.
46 Medical Inspection of Schools. G. H. Heitmuller, Washington.
47 Case of Multiple Fibroids of the Uterus. J. W. Bovée, Washington.
48 Case of Ectopic Pregnancy. D. S. Lamb, Washington.

42. **Fractures of Shaft of Femur.**—White recommends wiring, especially in cases of fracture in the upper third of the shaft and other fractures, when perfect apposition is impossible and when union is delayed or vicious. He is firmly convinced that the future treatment of this fracture will be largely operative.

43. **Injury of Cornea.**—As the result of the explosion of a pop bottle Lamb's patient sustained a very severe injury of the cornea. The wound extended from above the sclerocorneal margin, including the ciliary body, across the center of the cornea, nearly to the opposite sclerocorneal margin. The anterior chamber was absent and the iris filled the wound from end to end. Rest in bed, a pressure bandage and the instillation of eserin sulphate constituted the treatment employed. The patient made an excellent recovery, his distant vision without glasses being 6/6.

45. **Phenol in Erysipelas.**—Randolph is convinced that in the application of pure carbolic acid, controlled by alcohol, used before secondary infection of the deeper tissues has occurred, we have almost a specific for erysipelas. He reports two cases in which this method of treatment was successful. In one of these cases the disease was communicated by a barber.

Louisville Monthly Journal of Medicine and Surgery.

March.

49 *Cases of Tuberculosis Treated with Serum. S. W. Holloway, Louisville.
50 Diagnosis and Treatment of Pulmonary Tuberculosis. F. M. Walker, Louisville.

49. Serum in **Tuberculosis.**—Holloway believes in the efficacy of the serum treatment of tuberculosis and reports 15 cases to illustrate the benefits he has derived from its use. In the early cases the best results were obtained; the next, in cases somewhat advanced, but not infected. Cases of mixed infection were apparently made worse, and the far advanced cases showed no reaction but progressed as under other methods of treatment. Medicinal treatment was eliminated as far as possible, and no fixed diet was insisted on. In every case the diagnosis was confirmed microscopically.

Journal of Cutaneous Diseases, New York.

March.

51 *Syphilitic Alopecia. H. G. Klotz, New York.
52 *Phagedenic and Serpiginous Ulcers and Infective Granulomata. W. F. Breakey, Ann Arbor, Mich.

51. **Syphilitic Alopecia.**—Klotz is of the opinion that alopecia is not a common or regular symptom of the early stages of syphilis, although a certain number of cases may be accompanied by a diffuse loss of hair, varying in degree, similar to that observed after other infectious diseases. There is, however, a form of alopecia that occurs almost exclusively in syphilitics, and it is so characteristic as to be diagnostic of syphilis, either acquired or hereditary. It occurs in the form of ill-defined, irregular, small, sometimes coalescent patches of baldness distributed principally over the back and uppper portions of the scalp and giving it a mangy or moth-eaten appearance. It generally follows a very tedious course, although terminating in restoration of the hair.

52. **Phagedenic and Serpiginous Ulcers.**—Breakey reports a case of this kind which is unique mainly because of its duration. The diagnosis was somewhat uncertain because the lesions resembled the ulcerating granulomata. The ulcer was situated across the posterior side of the right thigh.

New Orleans Medical and Surgical Journal.

March.

53 *Operative Surgery of Spine and Cord. W. S. Bickham, New Orleans.
54 Successes and Failures in Intubation. H. Dupuy, New Orleans.
55 Case of Dermatobia Noxialis. J. B. Elliott, Jr., New Orleans.

53. **Operative Surgery of Spine and Cord.**—Bickham pleads for greater ability on the part of the surgeon to diagnose his own neurologic cases, which involves a broader knowledge of physiologic, pathologic and clinical phenomena of nerve functions and nerve conditions. He says that in the absence of such ability and in the present status of limited knowledge of the cord in health and disease, and considering the equivocation of many clinical phenomena, in many cases, the only possibility of ascertaining the condition of the cord and, consequently, of giving a patient the best chance for recovery is by exposing the cord, seeing and palpating it. He also pleads for the freer application of surgical measures to a large variety of spinal lesions, at the same time laying stress on the need of more prompt surgical and sufficiently radical action in those cases in which surgical action is called for at all. He urges the substitution of the osteoplastic method of resection in exposing the spinal cord and canal, for the older form of exposure by laminectomy.

Northwest Medicine, Seattle, Wash.

February.

56 *Plea for a Better Knowledge of Materia Medica. L. R. Markley, Bellingham, Wash.
57 Conservative Midwifery. G. E. Fell, North Yakima, Wash.
58 *Cataracts Produced by Shocks from the Commercial Electric Current. H. Stillson, Seattle.

March.

59 *Treatment of Acute Septic Peritonitis. P. W. Willis, Seattle.
60 Syphilis. J. S. Smith, Bellingham, Wash.
61 Treatment of Patients and Methods of Sterilization at St. Mary's Hospital, Rochester, Minn. S. G. Gay, Selma, Ala.
62 Present Status of Orthopedic Surgery. R. J. James, Seattle.
63 *Gonorrheal Peritonitis in the Male. J. W. Thomas, Seattle.

56. **Plea for Better Knowledge of Materia Medica.**—Markley urges that physicians post themselves better than they do with regard to the physiologic action of drugs. After a thorough knowledge of diagnosis, it is essential to know what medicines are indicated in a given case. Markley says that medical colleges should devote more time to the teaching of materia medica and therapeutics.

58. **Cataract Produced by Electricity.**—Stillson reports three cases of opacities in the crystalline lens which were caused by electricity and which closely resemble cataracts caused by lightning. In the first case there is a complete loss of vision, and the only abnormality in the eyes is a cloudiness of the anterior portion of each lens, the cloud resembling small dust particles just under the anterior capsule. In tne second case numerous spots appear in the anterior surface of the lens, just under the capsule, and composed of dots and interlacing lines. The fundus was normal and vision equaled 8/10. The third case was similar to the second. The current causing these lesions was an alternating one of 20,000 and 30,000 volts.

59. **Treatment of Acute Septic Peritonitis.**—Willis outlines his treatment as follows: In the majority of cases the cause should be removed by operative interference, which should cause as little traumatism as possible to the peritoneum; saline flushing should be practiced and adequate drainage provided. Firm dressings should be applied to give rest to the bowels. Nothing should be given by mouth except water. Gastric lavage should be used as often as necessary, even once an hour. Saline solution should be given by rectum and, if necessary, subcutaneously. If necessary, nutritive enemata should be given. Exceptions to the operative portion of the treatment are cases which are too far advanced, thus requiring precisely the same treatment without operation, and some cases which develop from the pelvic organs of the female. The points which Willis emphasizes are the absolute necessity of avoidance of all kinds of nourishment by mouth, and the frequent use of gastric lavage.

63. **Gonorrheal Peritonitis in Male.**—Thomas reports two cases of gonorrheal peritonitis occurring in the male. In one case it is assumed that the infection came from the seminal vesicles. The second patient denied all possibility of gonorrheal infection.

The Laryngoscope, St. Louis.

February.

64 *New Method of Operating on Turbinal Hypertrophies. S. Yankauer, New York.
65 *External or Internal Operation for Suppuration of Accessory Nasal Sinuses. M. Halle, Berlin, Germany.
66 *Pharyngo-mycosis or Pharyngo-keratosis. F. J. Quinlan, New York.
67 Vocal Nodules. H. H. Curtis, New York.
68 *Case of Fibrous Atresia of Nares. J. H. Abraham, New York.
69 Complete Removal of Diseased Tonsils. E. Moraweck and G. C. Hall, Louisville.
70 Reverse Antrum Bone Forceps in Antrum Surgery. L. Ostrom, Rock Island, Ill.

64. **Turbinectomy.**—Yankauer describes a new method of operating for hypertrophy of the turbinates. The operation consists of two stages: 1, The excision of the hypertrophied tissue; 2, the suture of the wound. The latter is the essential feature of the operation and in order to carry it out successfully, special instruments are required. These and the steps of the operation are described in detail. The procedure has been employed successfully in 14 cases of hypertrophy of the inferior turbinate.

65. **Suppuration of Accessory Nasal Sinuses.**—Halle summarizes his paper as follows: 1. In every case of accessory sinus empyema, physiologic breathing is first of all to be established. 2. In every case a cure should be attempted by establishing a blood drainage opening into the nose. 3. In a large number of cases, perhaps in most cases, the frontal sinus also can be opened from within easily and without danger if the proposed method be followed. 4. The external operation is to be resorted to when the discharge is continuously profuse or of long duration; also when life is endangered. The after-treatment in such cases is to be conducted from within, unless the complete obliteration of the cavity by means of granulation is to be effected.

66. **Pharyngo-mycosis.**—Quinlan reviews the clinical history of this condition, the etiology of which is not definitely established.

68. **Fibrous Atresia of Nares.**—In the case reported by Abraham, a fibrous circular web was situated at the junction of the mucocutaneous surface of the vestibule. An oval-shaped

opening was situated near the center of the web, and through this the patient attempted to breathe. The web was removed under local anesthesia. A trauma, with a baseball bat, was the cause of the condition.

Ophthalmic Record, Chicago.

March.

71 *Severe Vertigo from Eyestrain. L. S. Dixon, Boston.
72 A New Schematic Eye. W. A. Fisher, Chicago.
73 *Case of Self-enucleation of Eyeball. G. L. Noyes, Columbia, Mo.
74 Filtration of Eye and Pathogenesis of Glaucoma. A. U. Troncoso, Mexico.
75 *Accurate Diagnosis of Conjunctivitis. J. Clothier, Philadelphia
76 Ocular Rotations. G. C. Savage, Nashville, Tenn.
77 Case of Chronic Pseudomembranous Conjunctivitis with Development of Ocular and Pharyngeal Diphtheria on Use of Jequirity. H. Harlan, Baltimore.
78 A Capsulotome. R. Denig, New York.
79 *Case of Primary Gamma of Sclera. C. D. Jones, Boston.
80 Differential Diagnosis Between Headaches of Ocular and Nasal Origin. M. Black, Denver.

71. **Severe Vertigo from Eyestrain.**—Dixon reports two cases of vertigo in which relief was given by the wearing of glasses.

73. **Self-Enucleation of Eyeball.**—Noyes reports the case of an insane woman, 65 years old, who forced her finger back into the socket of the eye and deliberately pulled the organ out. About 3 cm. of the optic nerve were attached to the eye. The woman attempted to enucleate the other eye, but only succeeded in causing blindness. It seems that the removal of the eye was prompted by an irresistible impulse, its origin being an hallucination of hearing. The patient was very religious and thought she heard a voice say: "If thine eye offend thee, pluck it out."

75. **Diagnosis of Conjunctivitis.**—Clothier emphasizes the importance of a careful bacteriologic examination of the ocular secretions when attempting to make an accurate diagnosis of conjunctivitis.

79. **Primary Gumma of Sclera.**—The patient whose case is reported by Jones was 36 years of age. Occupying a position about 3 or 4 mm. above the cornea was a diffuse, slightly nodulated swelling, very red and inflamed, in the center of which was a bright yellow spot. It was underneath the conjunctiva, and apparently located in the sclera. From the course of the disease and its reaction to specific treatment Jones considered it a case of primary gumma of the sclera.

Pennsylvania Medical Journal, Athens.

March.

81 *Treatment of Hemorrhage Occurring Within the Thorax and Abdomen. O. C. Gaub, Pittsburg, Pa.
82 *Symptomatology and Diagnosis of Lobar Pneumonia. J. I. Johnston, Pittsburg, Pa.
83 Complications of Lobar Pneumonia with Reference to Surgical Interference. P. Y. Eisenberg, Norristown, Pa.
84 *Treatment of Acute Lobar Pneumonia. J. M. Anders, Philadelphia.
85 *Vaccination and Antivaccination. B. Lee, Harrisburg, Pa.

81.—See abstract in THE JOURNAL, Oct. 13, 1906, page 1221.

82. **Pneumonia.**—Johnston details the results of an analysis of 100 cases of pneumonia, made for the purpose of determining the frequency of the so-called classical symptoms and signs. In this series there were 16 cases of apical pneumonia. Crises occurred in 72 cases from the fifth to the eleventh day, 31 per cent. of these occurring on the ninth day. Twenty-four of the patients died. Herpes was noted in many of the cases. In 87 per cent. of the cases there was pain over the area of lung involved; abdominal pain was present in 2 per cent.; pain on both sides in 1 per cent; pain in the back and legs in 3 per cent., and in 7 per cent. no history was obtained. In 53 per cent. the temperature was 103 F. or higher, while in 29 per cent. it was 102 plus. In 39 per cent. the pulse rate was 120 or more, while 17 per cent. had a pulse rate of not less than 110. Cough was present in all the cases. The character of the sputum was not noted in all the cases, but it was characteristic in 37 in which record was made.

84. **Treatment of Pneumonia.**—Anders emphasizes the value of hygienic measures and plenty of fresh air in the treatment of pneumonia. Strychnin, whisky and digitalis are recommended in suitable cases and the application of cold compresses to the chest and the reduction of temperature by cold spongings are discussed favorably.

85. **Vaccination and Antivaccination.**—Lee discusses the statistical government reports of Russia and Germany with reference to the efficacy of compulsory vaccination in the prevention of smallpox. The records are very much in favor of the methods employed in Germany, where vaccination is compulsory.

Medical Fortnightly, St. Louis.

March 25.

86 *Diet in Gastric Disorders. G. H. Hoxie, Kansas City, Mo.
87 *Treatment of Conjunctivitis Trachomatosa Relative to Sequelæ. F. P. Parker, St. Louis.
88 Spinal Irritation. W. T. Marrs, Peoria Heights, Ill.

86. **Diet in Gastric Disorders.**—Hoxie emphasizes the value of dietetic treatment in gastric disorders and suggests that every practitioner have ready at his disposal a few dietaries which every household can follow out. He says that a great deal may be accomplished by having patients suffering from gastric exhaustion rest for from one-half hour to an hour after each meal; especially, if such rest be taken in the open air and sunlight. The electric tub bath, with a sinusoidal current, given when the stomach is empty, acts as a stimulant, and cold douches applied to the spine early in the day and deep massage of the abdomen late in the afternoon are procedures which Hoxie has found useful.

87. **Trachoma.**—Parker urges early operation in trachoma. He says that if there were more operative treatment combined with local applications in the treatment of trachoma it would shorten the duration of the disease and at the same time lessen the hypertrophy of the conjunctiva, thereby minimizing the danger of complications.

Archives of Pediatrics, New York.

March.

89 *Anemia Infantum Pseudoleukemica. H. Koplik, New York.
90 *Modified Wet Nursing. T. S. Westcott, Philadelphia.
91 *Typhoid Infection Conveyed by Convalescent Infant. T. S. Southworth, New York.
92 *Hypertrophic Stenosis of Pylorus in Infant. R. B. Kimball and F. Hartley, New York.

89. **Anemia Infantum Pseudoleukemica.**—Koplik presents a very detailed report of nine cases of this affection, occurring in children ranging in age from 11 to 20 months. Three of the patients died and three improved under treatment. The lowest hemoglobin record was 25 per cent.; the highest 65 per cent. In the latter case the leucocytes numbered 96,000, the highest count in any of the nine cases. Careful differential counts were made, as may be seen by consulting the original report.

90. **Modified Wet Nursing.**—In the plan of feeding proposed by Westcott the human milk serves simply as one ingredient of the bottle mixture. The average yield for the day is apportioned in fairly equal amounts for each feeding, and the total quantity of the bottle is made up according to the needs of the individual case. He has found this method a most helpful aid in convalescence from summer diarrheas in very young infants. The object of this plan of feeding is to secure a food which can be appropriated at once by the starving organism of the infant, and then to continue this until, by gradual increase, the artificial ingredients of the bottle can be fitted to the increasing demands of the infant, so that the human milk can be dispensed with altogether and the thriving infant allowed to proceed on a satisfactory artificial food.

91. **Typhoid.**—Southworth presents the histories of two house epidemics of typhoid fever in different cities, the connecting link between which was an infant 16 months of age, who, preceded and followed by definite cases of typhoid in his own family, passed through an illness with prolonged but relatively moderate temperature, with gastrointestinal symptoms and a complicating pneumonia, without positive Widal at the time, but after some weeks giving a positive reaction. The infant, after a normal temperature for about two weeks, during part of which he was under observation in a hospital, then entered another family and house in which there had been no typhoid, and during his stay there had been only one acute indisposition of a few days' duration, with temperature falling to the normal in two days under local treatment of an edematous and excoriated prepuce. Three weeks after his arrival there two children came down with typhoid, and two weeks

later a third child. Painstaking inquiry revealed no other source of infection. The evidence seemed to point strongly to the infant as the carrier of infection after his convalescence.

92. **Hypertrophic Stenosis of Pylorus.**—Kimball and Hartley report a case of hypertrophic stenosis of the pylorus, which was treated dietetically for about three weeks, when it became necessary to do a posterior gastrojejunostomy, from which the patient made an uneventful recovery.

Fort Wayne Journal-Magazine.

March.

93 European Clinics and Clinicians. C. E. Barnett, Fort Wayne.
94 Cases of Cholelithiasis. B. Van Sweringen, Fort Wayne.
95 Adjustment of Glasses by the Physician. A. E. Bulson, Jr., Fort Wayne.

Southern California Practitioner, Los Angeles.

March.

96 History and Etiology of Pulmonary Tuberculosis. H. Herbert, Los Angeles.
97 Pathology of Pulmonary Tuberculosis. S. P. Black, Los Angeles.
98 Medical Tuberculosis in Children. J. C. King, Banning, Cal.
99 Symptomatology of Pulmonary Tuberculosis. N. Bridge, Los Angeles.
100 Physical Signs of Pulmonary Tuberculosis. W. J. Barlow, Los Angeles.
101 Complications of Pulmonary Tuberculosis. G. L. Cole, Los Angeles.
102 Prognosis of Pulmonary Tuberculosis. C. C. Browning, Monrovia, Cal.
103 Dietetic Treatment of Pulmonary Tuberculosis. G. H. Kress, Los Angeles.
104 Medicinal and Other Treatment of Pulmonary Tuberculosis. F. M. Pottenger, Monrovia, Cal.
105 Progress in Medicine in 1906. D. J. Frick, Los Angeles.
106 Progress in Surgery in 1906. E. H. Wiley, Los Angeles.
107 Progress in Obstetrics in 1906. E. M. Lazard, Los Angeles.
108 Progress in Pediatrics in 1906. P. A. Adams, Los Angeles.

Detroit Medical Journal.

March.

109 Tuberculosis in Michigan To-day. F. W. Shumway, Lansing, Mich.
110 Home Treatment of Tuberculosis. B. R. Shurly, Detroit.
111 Résumé of Accomplishments of the Michigan State Medical Board During 1906. B. D. Harison, Detroit.

Columbus Medical Journal.

March.

112 Present Status of Surgery. H. P. Pomerene, Canton, Ohio.
113 Present Status of Reciprocity Relations Between Ohio and Other States. A. Ravogli, Cincinnati.
114 At What Point in the Curriculum Should a Student Begin to Attend Clinics. M. J. Lichty, Cleveland.
115 Kentucky Schools and Their Relation to the Ohio Board. R. L. Thomas, Cincinnati.

Philippine Journal of Science, Manila.

December, 1906.

116 Physiologically Active Constituents of Certain Philippine Medicinal Plants. R. F. Bacon, Manila.
117 Toxic Action of Saponins. R. F. Bacon and H. T. Marshall, Manila.
118 Physiography of the Philippine Islands. W. D. Smith.
119 Agenesis of the Vermiform Appendix. H. T. Marshall and R. T. Edwards, Manila.
120 Problems in Economic Entomology in the Philippines. C. S. Banks, Manila.
121 Philippine Fibers and Fibrous Substances: Their Suitability for Paper Making (Part II). G. F. Richmond, Manila.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

March 30.

1 *Diagnosis of Certain Forms of Kidney Disease. J. R. Bradford.
2 *Albuminuric Retinitis. W. H. Jessop.
3 *Treatment of Syphilis. G. Pernet.
4 *Bacteriologic Diagnosis of Cholera. M. A. Ruffer.
5 *Insanity, Its Causes and Increase. G. H. Savage.
6 Recurrent Torsion of Spermatic Cord. W. G. Nash.
7 *Lupus Vulgaris of Long Duration; Iodoform Injections; Rapid Recovery. T. W. Dewar.
8 Treatment of Scabies by Balsam of Peru. F. J. W. Porter.
9 Spirillosis and Hematozoal Disease of Domestic Fowls in the Anglo-Egyptian Soudan. A. Balfour.

1. **Kidney Disease.**—Bradford discusses the diagnosis of certain forms of renal disease, particularly functional albuminuria and nephritis, and also reviews the principles of treatment of Bright's disease. He lays great stress on the importance of never diagnosing the presence of serious renal disease merely on the strength of a urinary examination. He says that this should always be controlled by a clinical examination of the patient, with special reference to the state of the cardiovascular system and the general nutrition.

2. **Albuminuric Retinitis.**—Jessop describes three cases of typical albuminuric retinitis occurring in a case of parenchymatous nephritis, in one of chronic interstitial nephritis and in one of acute nephritis in pregnancy.

3. **Treatment of Syphilis.**—The general treatment of syphilis, as usually carried out, is reviewed by Pernet, and special reference is made to intramuscular injections of mercurial preparations.

4. **Bacteriologic Diagnosis of Cholera.**—As the result of careful experimentation, Ruffer is of the opinion that it is not advisable to trust to the agglutination test only in the bacteriologic diagnosis of cholera. The test is said to be useful but not specific.

5. **Insanity.**—In this, his third lecture, Savage discusses alcoholism and influenza as causes of insanity, the sexual causes, and the question of an increase in the number of the insane.

7. **Lupus Vulgaris**—In the case reported by Dewar, the disease had existed for about fourteen years, resisting treatment by cauterization and inunction and radiotherapy. The lesions were situated on the left side of the nose, over the left malar bone, on the lobe and helix of the right ear, and at the angle of the jaw on the right side. A test injection of tuberculin was followed by a rather violent reaction. The treatment adopted by Dewar was about as follows:

After washing off the scabs with hot water, the lesions were dried, and thin pieces of cotton wool, soaked in a 5 per cent. solution of cocain, were applied to the ulcers for a few minutes. On removing these, thin films of cotton wool, soaked in a ten-volume solution of peroxid of hydrogen, were left on and kept in position by touching the edges with collodion. Every second day the patient was given an intravenous injection of 15 minims of an ethereal solution of iodoform plus liquid paraffin. Within forty days the patient was cured completely.

The Lancet, London.

March 30.

10 *Increase in Insanity. G. H. Savage.
11 Relations of Laryngology and Rhinology to General Practice. F. Semon.
12 *Acute Infective or Toxic Conditions of the Nervous System. E. F. Buzzard.
13 *Treatment of Acute Failure of the Heart. C. Bolton.
14 *Cerebrospinal Fever. N. Raw.
15 *Cases of Puerperal Septicemia. A. K. Gordon.
16 Chloretone and Its Uses, Especially in Chorea. W. E. Wynter.
17 *Pulmonary Hypertrophic Osteoarthropathy Occurring in Case of Congenital Heart Disease. H. B. Shaw and R. H. Cooper.
18 Twin Ovum in a Tubal Pregnancy. A. F. Rutherford.
19 Suppurating Hydatid of Gall Bladder. A. G. L. Reade.
20 Case of Dupuytren's Contraction Successfully Treated with Fibrolysin. W. D. Lawrie.

10.—See abstract No. 5 in this issue of THE JOURNAL.

12. **Acute Infective or Toxic Conditions of Nervous System.**—In this paper, Buzzard discusses acute ascending myelitis, Landry's paralysis and acute toxic polyneuritis.

13. **Treatment of Acute Heart Failure.**—Nothing new is presented by Bolton with reference to the treatment of acute heart failure. He reviews the causes for the occurrence of such a failure and outlines the treatment that is usually adopted.

14. **Cerebrospinal Fever.**—Raw reports two cases which illustrate the impossibility of making an accurate diagnosis between cerebrospinal and acute tuberculous meningitis, especially in time of epidemic, when attention is turned in that direction.

15. **Puerperal Septicemia.**—In 49 cases of puerperal fever, reported by Gordon, there occurred 12 fatalities, 4 of these shortly after the patients reached the hospital. The routine treatment of these cases consisted in curettage and vigorous disinfection of the uterus. Antistreptococcic serum was given to 20 patients, the dose ranging from 50 to 200 c.c.; the usual amount injected was 100 c.c. Three of these patients died. Gordon believes that the proper treatment is thorough local disinfection, and that while sera and drugs are occasionally useful, they can never cure by themselves.

17. **Pulmonary Hypertrophic Osteoarthropathy.**—In the case reported by Shaw and Cooper, there was no lung disease. A

systolic murmur was heard over the precordium, probably due to a defect of the interventricular septum. A radioscopic examination was made and showed considerable enlargement of the bones of the legs, hands, feet and both forearms.

Journal of Tropical Medicine and Hygiene, London.

March 15.

21 Measures Against Mosquitoes in Port Said and Their Results. E. H. Ross.
22 Outbreak of Hemorrhagic Septicemia at Pokfulam, Hong Kong. J. M. Atkinson.
23 Epidemiologic Aspects of Small Outbreak of Beriberi. A. C. Ingram.

Journal of Obstetrics and Gynecology of the British Empire, London.

March.

24 Ovogenesis and the Formation of Interstitial Cells of the Ovary. J. E. Lane-Claypon.
25 *Possibilities of Ovarian Grafting in the Human Subject. E. S. Carmichael.
26 *Mechanical Dilatation of the Cervix Uteri in Obstetrics. J. C. H. Leicester.
27 *Prognosis of Pregnancy in Patients with One Kidney. J. H. Ferguson.
28 Radical Abdominal Operation for Uterine Cancer. E. T. Thring.
29 Case of Villous Tumor of the Uterus in Woman Aged 84. J. Bland-Sutton.
30 Complete Inversion of the Uterus Following Delivery. W. Tate.
31 Rupture of Vaginal Wall with Protrusion of Small Intestine in Woman aged 63. A. N. McGregor.
32 Case of Patent Urachus Over One Inch in Diameter Forming a Tubular Prolongation of Bladder. G. B. Marshall.

25. **Ovarian Grafting.**—Carmichael has looked into the value of ovarian grafting from the surgical standpoint. He found that in the rabbit the whole ovary may be transplanted with success; but in the majority of cases, about 80 per cent., there was partial degeneration of the ovary. The ovary also may undergo either a fibrous or a cystic degeneration. The germinal epithelium persists in a small percentage of cases. The Graafian follicles and ova persist and mature some months after grafting, but ultimately tend to become cystic. From these observations Carmichael concludes that it is unlikely that the whole human ovary can be grafted with success, but that partial grafting is more likely to succeed, the grafting of the cortical portions of the ovary more especially. Furthermore, part of the ovary may ovulate and preserve its function of internal secretion.

26. **Mechanical Dilatation of Cervix Uteri.**—Leicester reports 16 cases in which he made use of some form of mechanical dilatation of the cervix in order to effect delivery. In none of these cases was there any untoward effect which could be attributed to the method of dilatation. The instrument used in the first six cases was Bossi's model; in the remainder, Preiss's modification of the Bossi instrument. In 7 cases dilatation was resorted to for eclampsia, in 6 for rigid cervix, and in 1 each for induction of labor, placenta prævia and hydatid mole. Leicester is of the opinion that these dilators have a distinct place in obstetric practice, but that the number of cases in which their use is indicated is limited.

27. **Pregnancy in Women with One Kidney.**—The case reported by Ferguson shows that in a patient whose remaining kidney is healthy, and has had time to become sufficiently hypertrophied to perform the work of two, the strain of pregnancy can be borne fairly well. The patient had, on the whole, less severe albuminuria and less toxic disturbance than many albuminuric primigravidæ, both of whose kidneys are known to be organically sound.

Semaine Médicale, Paris.

33 (XXVII, No. 12, pp. 133-144.) Mechanism and Pathogenesis of Hernia of the Cecum. (Hernies du cæcum.) P. Cavaillon and R. Leriche.
34 (No. 13, pp. 145-156.) *Neuronophagy. (Ce qu'il faut entendre par neuronophagie.) G. Marinesco.
35 Persistence of Hymen Not an Absolute Sign of Virginity. (L'état de virginité apparente d'une femme mariée n'est pas, comme l'a admis un tribunal français, une preuve absolue de l'abstention de tout rapport conjugal.)

34. **Neuronophagy.**—Marinesco reviews what has been written on the destruction of nerve cells by phagocytosis. His conclusions are that neuronophagy actually does occur, but only when the nerve cells have become degenerated or disintegrated from any cause. Experiments with cauterization of brain tissue, injection of lycopodium powder and transplantation of ganglion cells have convinced him that so long as the nerve cells remain intact they are respected by the phagocytes, but that dead cells are soon incorporated by the phagocytes. He suggests "necrophagy" as a more appropriate term than "neuronophagy."

Archiv f. klinische Chirurgie, Langenbeck's, Berlin.

Last indexed page 1384.

36 (LXXXI, Part 1, pp. 1-786.) *Bone Tumors in Skull. (Tumoren des Schädeldaches.) von Eiselsberg.
37 *Subdural Hematoma. (Subdurale Hämatone.) Krönlein.
38 Removal of Malignant Glioma of Brain. (Gliom des Grosshirns.) Id.
39 *Operations in Posterior Cranial Fossa. (Hintere Schädelgrube.) F. Krause.
40 Primary Epitheliomata of Vascular Plexus of Brain. (Epithelgeschwülste der Adergeflechte des Gehirns.) M. Bielschowsky and E. Unger.
41 *Perforation of Gastric Ulcer. (Magengeschwürs-Perforation.) Brentano. Id. W. Körte.
42 *Peritonitis in Little Girls, Due to Acute Salpingitis. (Peritonitis der kleinen Mädchen.) Riedel.
43 Elephantiasis After Extirpation of Inguinal Glands. (Lymphdrüsenexstirpation und Eleph.) Id.
44 *Anatomy and Surgery of the Splenic Flexure of Colon. (Flexura coli sinistra.) O. Madelung.
45 *Kidney Operations. (Nierenchirurgie.) H. Gebele.
46 *Early Diagnosis and Operation for Tuberculosis of Kidney and Bladder. (Nieren- und Blasentub.) H. Kümmell.
47 *Treatment of Cancer of the Tongue and Ligature of External Carotid. (Zungenkrebs.) Küster.
48 Treatment of Wounds of Vessels During Campaign of 1905-6. (Gefässverletzungen.) Zoege von Manteuffel.
49 Historical Sketch of Extirpation of Aneurisms. (Exstirpatio aneurysmatis.) A. Köhler.
50 Removal of Tumors in Wall of Chest with Wide Opening of the Pleura. (Brustwandgeschwülste.) L. Rehn.
51 *Spinal Anesthesia. (Lumbalanästhesie.) H. Heineke and A. Laewen.
52 *Causes of Serous Effusions in Joints and Their Treatment. (Gelenkhydrops.) O. Hildebrand.
53 Congenital Coxa Vara from Defective Development of Cartilage. (Coxa vara adnata chondrodystrophica.) B. Bosse.
54 Results of Tendon Transplantation. (Sehnenplastiken.) A. Hoffa.
55 Osteomyelitis of Pelvis. (Beckenosteomyelitis.) A. v. Bergmann.
56 Differences in Resisting Power of Various Tissues and Cavities. (Exp. Untersuchung über die Infection und Bacterienresorption der Gelenke, des Subduralraumes, etc.) W. Noetzel.
57 Abdominal Fetal Inclusions (Foetus in foetu.) F. Rosenbach.
58 Traumatic Rupture of Hepatic Duct. (Ruptus hepaticus.) Hildebrandt.
59 Remote Results of 100 Operations on the Biliary Passages. (Op. an den Gallenwegen.) T. Kocher and H. Matti.
60 Hitherto Unpublished Latin Translation of Arabian Work on Medicine and Surgery by Ali Abbas, A. D. 994. (Lateinische Version der Chirurgie der Pantegni). J. Pagel.

36. **Bone Tumors in the Skull.**—Three cases of large bony growths in the frontal bone are described in which operative intervention gave comparatively good results. In the two severer cases the operation was rendered difficult by the danger of involvement of the meninges in an otherwise harmless inflammatory condition in the nose, and also by the difficulty of keeping the wound aseptic when it was necessary to open the frontal sinus. The indications for operation were imperative, as the osteoma was growing fast and had already produced choked disc. There was danger of impending epilepsy, headache, blindness, etc., if the growth, harmless in itself, should increase much more.

37. **Subdural Hematoma.**—Krönlein's patient was a young man who fell on his head. The only symptom at first was headache. On the sixth day symptoms of Jacksonian epilepsy were observed, with signs of increasing pressure on the brain. A subdural hematoma was diagnosed and its evacuation restored conditions to normal.

39. **Operations in Posterior Cranial Fossa.**—Krause gives an illustrated description of the technic with which he has successfully removed tumors in the cerebellar pontine angle, and reports a case in detail. The patient was a woman of 45. The tumor shelled out readily, and proved to be a fibrosarcoma, measuring 18 by 25 mm. The symptoms of general pressure on the brain had developed gradually in the course of three years. The first symptoms were attacks of vertigo, gradually increasing to actual syncope, disturbances in hearing and tumbling toward the right side, with, later, intense headache, vomiting, diplopia and occasionally unconsciousness and convulsions. The left pupil was more dilated than the right, and the corneal reflex on the side of the tumor was abolished. Pains were sometimes felt in the right side of the face. The right ear was entirely deaf. The patient could

hardly walk and turned constantly toward the right. If the eyes were closed the woman fell, and generally toward the right side. She had from three to ten attacks of vertigo a day, even when in bed. The mastoid process was not tender; the pulse was somewhat accelerated. The woman rapidly recovered after removal of the tumor; the choked disc subsided and the hearing and ocular reflexes were soon normal on both sides. She could walk without trouble or dizziness, and even with the eyes closed there were only slight traces of the former disturbances. In a second, similar case, a sarcoma, as large as a hen's egg, was found at the base of the brain, and the attempt to remove it was abandoned. The Gasserian ganglion was transformed into a tumor mass, and yet the patient had never suffered from trigeminal neuralgia. In some other cases internal hydrocephalus induced symptoms suggesting cerebellar tumor, and Krause exposed the left hemisphere of the cerebellum on one side and, three weeks later, the other hemisphere, but found nothing, although he made an incision in each so that he could inspect the arbor vitæ to a depth of 3 cm. One patient derived great benefit from the relief from pressure after the operation; the choked disc subsided on each side, and she survived for three years. Autopsy revealed internal hydrocephalus. He describes some other cases in which autopsy confirmed the diagnosis of an extramedullary tumor near the atlas, and showed that it could have been easily removed if the surgeons had had a little more courage. He adds that the amount of compression which the spinal cord will bear is amazing.

41. **Perforation of Ulcer of Stomach.**—Körte relates his experiences with 19 cases of operative intervention for perforation of a gastric ulcer, with the recovery of 13 of the patients. All but five of the patients were men. The rigid abdominal walls were the most characteristic sign of the perforation; next came extreme sensitiveness to pressure at the epigastrium, at the umbilicus or over the entire abdomen. The contact of the acid gastric juice with the serosa ordinarily induces intense pain, but vomiting was noticed in only six of the cases and soon subsided. The physician must not be misled by this to assume that the trouble is transient. In two instances appendicitis was supposed to be responsible for the symptoms and the incision was made in the ileocecal region. An important sign for differentiating perforation in the stomach is the acid, sour smell of the effusion, while the effusion in case of appendiceal peritonitis soon becomes ichorous. One of the patients had been operated on twice, with a gastroenterostomy for callous ulcer of the pylorus, when the signs of perforation developed a year after the last operation. Four other patients were moribund when received. In three other cases an exploratory laparotomy was made on suspicion of perforation. In one case the trouble was traced to morphin addiction; in another no lesion was found in the abdomen and the patient died, presumably from perforation of an ulcer in the esophagus. In the third case nothing abnormal was found to explain the severe gastric symptoms occurring after a fall, and the patient soon recovered.

Brentano reviews 75 cases of perforation of gastric ulcer observed at the Urban Hospital, including 46 women, with 39 deaths, and 29 men, with 18 deaths. In 15 cases there had been nothing in the history to suggest a stomach lesion.

42. **Peritonitis in Little Girls as Sequence to Acute Salpingitis.**—Riedel has had occasion to observe eight cases of peritonitis in girls betwen 4½ and 9 years old, secondary to acute salpingitis. He operated in every case on the diagnosis of appendicitis, but was unable to save the patients. Another case was observed, but no attempt at operation was made. The same findings were encountered also in two young women. The infection was due to staphylococci or streptococci which had entered from the vagina and passed into the peritoneum through the tubes. All the patients had intact hymens. Another little girl had appendicitis first and then salpingitis. This brings to 17 per cent. the number of cases of peritonitis from infection by way of the vagina in a total of 48 cases of peritonitis in girls under 10 at the Jena Hospital.

44. **Lesions at the Splenic Flexure of Colon.**—Madelung concludes this exhaustive study of the pathologic anatomy and surgery of this part of the intestine with the statement that cancer of the splenic flexure offers more favorable conditions for a cure, even in advanced stages, than cancer at other points in the large intestine. A palpable tumor can not be counted on. Study of the literature shows that glandular involvement is extremely rare. In six cases a complete cure for a period of from three to eight years to date is known.

45. **Kidney Surgery.**—Gebele reviews 50 operations on the kidneys done in von Angerer's service at Munich. His experience with cryoscopy of the blood has always been favorable, and chromocystoscopy has also rendered him good service, but catheterization of the ureters is his main reliance. Seven of the 50 patients died, but in no case was the death due to insufficiency of the remaining kidney. There was a history of gonorrhea in a large proportion of the cases.

46. **Tuberculosis of Kidneys and Bladder.**—Kümmell warns that in tuberculous cystitis or nephritis the trouble is frequently referred to the genital organs, and the patients are treated for displacement of the uterus or for some allied condition, the physician not taking the trouble to examine the urine which would give the clue to the trouble. A chronic gonorrheal infection in a man or woman frequently causes an existing tuberculous affection of the bladder or kidney to be overlooked. Slight cloudiness of the urine, apparently slight cystitic disturbances, especially in women, slight pain in the kidney region and disturbance in the general health, pallor and some loss in weight should compel examination of the urine for tubercle bacilli. Catheterization of the ureters confirms the diagnosis.

47. **Cancer of the Tongue.**—This volume of the *Archiv* was dedicated to the late E. von Bergmann on his seventieth birthday, and is illustrated by numerous plates. In this article on cancer of the tongue, Küster refers to von Bergmann's pioneer work in this line, and then describes a case in which great improvement followed the simultaneous application of Roentgen exposures and ligation of the external carotid on both sides. The patient was a man of 36, a cigar maker, and the growth was inoperable when first seen, but under the treatment mentioned conditions improved to such an extent that the radical removal of the cancer became possible. The same measures applied in a second case were temporarily successful, but collateral circulation soon annulled the effect of the ligatures and the patient succumbed to the progress of the cancer. Küster states that he has ligated the external carotid on both sides 33 times, and has found 130 cases in the literature. The mortality has been about 1.54 per cent. His experiences were always favorable, even in his latest case, in which the artery was ligated on account of an angioma of the scalp in an infant of six weeks. His experience with cancer of the tongue indicates that the operations on the bones should be restricted to the minimum, as they are more serious than surgical measures on the soft parts. Ligature of the external carotid, he adds, is no more dangerous than ligature of the lingual artery, while it is far more effectual.

51. **Experimental Spinal Anesthesia.**—Among the conclusions of the research reported is one to the effect that subdural application of an anesthetic does not cause intoxication unless the drug comes in direct contact with the centers of the medulla oblongata and of the brain. Absorption from the dural sac of the small amounts of anesthetics used in spinal anesthesia has no toxic action.

52. **Treatment of Effusion into a Joint.**—Hildebrand explains the effusion as the result of abnormal nervous excitability on the part of the synovial membrane and states that treatment should aim to reduce this excitability. Injection of carbolic acid or tincture of iodin answers this purpose, but the effect can be much enhanced by preceding the injection of carbolic acid with an injection of salt solution to wash away the slimy secretions from the surface of the membrane, thus allowing the carbolic acid to penetrate better into the tissues. The effect is also enhanced by completely expelling the blood from the part. This reduces the amount of fluid in the tissues, so that they take up the injection better, the tissues opposing less resistance to the penetration of the fluid in the absence of the protecting nourishing influence of the blood.

Berliner klinische Wochenschrift.

61 (XLIV, No. 7, pp. 181-208.) *Induced Thrombosis in Treatment of Varices. (Künstliche Thrombose der Var.) Tavel.
62 *Isolated Subcutaneous Injury of Pancreas. (Verletzungen des Pankreas.) F. Karewski.
63 Dyes in Treatment of Experimental Trypanosome Infections. (Farbstoff-behandlung der Tryp.) Weber and Krause.
64 Remission of Multiple Sclerosis for 13 Years to Date. (Prognose der mult. Sklerose.) O. Maas.
65 *Primary and Secondary Tuberculosis in Man. (Tub. des Menschen.) Edens.
66 Age Is True Cause of Cancer. (Problem des Krebses.) J. Rülf. Reply by B. Fischer in No. 10.
67 (No. 8, pp. 209-232.) *Magnet Operations in Ophthalmology. (Magnet-Op.) J. Hirschberg.
68 Statistics of Primary Intestinal Tuberculosis. (Darmtub.) J. Orth.
69 *Registering Contractions of Left Auricle by Way of the Esophagus. (Registrierung der Kontrakt. des 1. Vorhofs.) G. Joachim.
70 *Test for Sugar in Urine. (Bestimmung des Harnzuckers.) I. Bang.
71 *Ultramicroscopic Study of Granules in Leucocytes. (Leukocyten und Hämokonien.) M. Mühlmann.
72 Determination of Hypermetropia without Skiascopy. (Hypermetropie.) Lyritzas.
73 Importance of Breast Milk in First Few Days of Life. (Frauenmilch in den ersten Lebenstagen.) B. Salge.
74 (No. 9, pp. 232-264.) Technic of Bronchoscopy. (Bronchoskopie.) G. Gottstein.
75 Proliferation of Cancer Due to Action of Schüller's Parasites. (Ursache der Krebswucherung.) M. Schüller.
76 Lactic Acid a Secondary Product of the Muscular Spasms in Eclampsia. (Angebliche ursächliche Bedeutung der Fleischmilchsäure bei Eklampsie.) J. Donath.
77 Erroneous Interpretation of Enlarged Bronchial Glands in Children. (Physikal. Brustbefund.) H. Neumann.
78 *Blindness from Quinin. (Chinin-Amaurose.) W. Seeligsohn.
79 Physiotherapy of Tabes Dorsalis. (Physikal. Behandlung.) E. Tobias and E. Kindler.

61. **Induced Thrombosis in Treatment of Varices.**—Tavel noticed that patients with varices who suffered from thrombosis, after operations on the enlarged veins, fared better later than those patients who had displayed no tendency to thrombosis. Acting on this suggestion, he intentionally induces thrombosis in such cases, and has found the results invariably superior. His first communication on the subject was summarized in THE JOURNAL, Feb. 18, 1905, page 590. His experience now includes 27 cases, all with gratifying outcome. The main trunk of the vein may be ligated by passing a curved needle around the vein and bringing it out through the hole in which it entered, thus encircling the vein with a loop which is then tied fast; the ends of the thread are cut off near the knot. The skin is then taken up in a fold, when the knot slips down out of sight under the skin. His more usual technic, however, is by a transcutaneous method which allows resection of a part of the vein, generally about 4 cm. In order to locate the vein, he outlines its course with fuchsin as the patient stands. In case the vein is not visible or palpable he draws a line from the inner condyle to the middle of Poupart's ligament. This corresponds approximately to the course of the long saphenous vein, although in the middle of the thigh the vein is sometimes a little farther toward the back. Twenty-four or forty-eight hours after the ligature he commences to induce thrombosis. This he accomplishes by injecting 10 c.c. of a 5 per cent. solution of carbolic acid. This irritates the intima of the vessel and induces autochthonous thrombosis which spreads upward to the ligated point. A few days later, or at intervals of two or three days, another injection is made at another point until the entire varicose region is completely thrombosed, and the walls of the vessel become transformed finally, more or less, into connective tissue. The patient stands on a chair in front of a table and the syringe is introduced into the vein until the blood flows, then the syringe is filled with the carbolic acid solution and the patient sits down on the table and the solution is injected at two or three points. After this the patient is placed in bed or allowed to leave the clinic on foot, according to the conditions. There is occasionally a slight rise in temperature, but no disturbance has ever been noted in the general health. Usually the new circulation is soon established, but sometimes two or three months may elapse before normal conditions are restored. To promote the circulation he sometimes applies bandages or superheated air to the part and gives hamamelis and caffein internally, especially in case of diffuse phlebectasia. The ligature must invariably be applied well above the points where thrombosis is suspected or anticipated. The ligature above the focus of phlebitis and the induced thrombosis shorten the time of confinement to bed, he states, exclude all danger of embolism, and effect a radical cure of the phlebitis which otherwise is liable to recur.

62. **Treatment of Isolated Subcutaneous Injury of Pancreas.**—Karewski remarks that persisting hemorrhage and escape of pancreatic juice after injury of the pancreas are both threatening, but the latter is the more serious of the two and should be apprehended when the injury is near the head of the pancreas. He describes a case in which the laparotomy followed the injury in three hours; in Garré's case five and one-half hours elapsed before either hemorrhage or fat necrosis had had time to assume alarming proportions. Two other patients were saved by a prompt laparotomy and 12 succumbed when the operation was delayed. To promote the healing of the fistula after operation, it is important to restrict the production of the pancreatic secretion and to ward off metabolic disturbances from the loss of the juice. Meat and fat proved the most useful in this respect, in his case, while carbohydrates of all kinds had to be avoided. Large doses of sodium bicarbonate during and between the meals also checked the production of the juice. The healing of the fistula was promoted by application of tincture of iodin, with antiseptics to the skin outside to prevent maceration. The rapid healing of the pancreatic fistula in this case and the complete recovery of the lad after the severe injury to the pancreas render the case noteworthy as suggestive for future injuries of the kind.

65. **Primary and Secondary Tuberculosis in Man.**—Edens reports some new cases of intestinal tuberculosis—a total of 30. Infection in infancy, he thinks, is very common, but the individual organism reacts to it in some persons with the production of immunity, while in others the reaction takes the form of the "scrofulous diathesis," which entails greater susceptibility to secondary infection later.

67. **Magnet Operation in Ophthalmology.**—Hirschberg has applied the magnet in 347 cases of injury of the eye during the 27 years since he first suggested its application in ophthalmology. In 36 out of 64 cases between 1896-1903, an iron splinter in the retina or vitreous body was successfully removed with the magnet, leaving little if any impairment of vision. In 22 cases the splinter was so large or inflammation had already set in, so that finally the eye had to be enucleated. In 2 recent cases the magnet operation was performed on the injured eye when the other eye had long been blind. In one of these, an iron splinter, 2x2 mm., weighing 5 mg., was removed from the anterior chamber with the large and hand magnets nearly two years after the injury, with successful outcome.

69. **Registration of Auricle Beat Through the Esophagus.**—Joachim describes a case of "dissociation of the auricle and ventricle rhythms." The presumptive diagnosis from the extreme slowness of the pulse and the syncopal spells was confirmed by registration of the auricle beat by way of the esophagus, according to the technic described by Minkowski and Rautenberg (THE JOURNAL, Sept. 22, 1906, page 975). Joachim reproduces the tracings, but adds that the procedure is extremely tedious and disagreeable for the patient, even to the point of affecting the general health for several days afterward.

70. **Quantitative Test for Sugar.**—Bang makes high claims for the convenience, extreme precision and rapidity of the simple test for sugar in the urine which he here describes. The presence or absence of albumin does not affect the findings, and they are more accurate in the presence of very small amounts of sugar than with any other test, polarization, fermentation or reduction. Instead of a caustic alkali he uses potassium carbonate in the solution of copper, and titrates with hydroxylamin until the blue tint vanishes. The first copper solution is made by dissolving with heat 500 gm. anhydrous potassium carbonate; 400 gm. potassium sulphocyanate, and 100 gm. potassium bicarbonate in 1,200 c.c. water. When the mixture has cooled, a solution of 25 gm. crystallized copper sulphate in 150 c.c. water is added, the vessel rinsed, and the jar filled up to the 2 liter mark. In another vessel,

6.55 gm. hydroxylamin sulphate, and 200 gm. potassium sulphocyanate are mixed with water to the 2 liter mark. Both solutions are durable, and 1 c.c. of the hydroxylamin solution will decolor 1 c.c. of the copper solution. To 10 c.c. of urine 50 c.c. of the copper solution are added and the whole boiled for three minutes. The vessel is then rapidly cooled under running water, and the fluid is then titrated with the hydroxylamin solution until the blue tint vanishes, which is usually in a few seconds. He gives a little table showing that 44 c.c. of the hydroxylamin solution correspond to 4.9 mg. sugar; 33 c.c. to 15.4 mg. sugar; 22 c.c. to 27.7 mg. sugar; 11 c.c. to 41.8 mg. sugar, and 1 c.c. to 59.4 mg., and so on. He is now experimenting to establish beyond question the standards for normal urine, for comparison.

71. Granules in Leucocytes.—Mühlmann reports that he has seen active movements in the granules in living leucocytes. He also states that the ultramicroscope has shown that Müller's "hemoconia" or blood-dust consists in reality of particles of fat in the blood.

78. Quinin Amaurosis.—Seeligsohn's patient was an anemic young woman who took 6 gm. (90 grains) of quinin in the course of three days. Vertigo, tremor and absolute deafness and blindness followed. Hearing returned in a day or so, but the blindness persisted for ten days and normal vision was not regained for two months.

Deutsche medizinische Wochenschrift.

80 (XXXIII, No. 11, pp. 409-448.) Gangrene of the Lungs. (Lungengangrän.) C. Beck.
81 *Infiltrating Inflammation of Colon and Sigmoid Flexure. (Infiltrir. Colitis und Sigmoiditis.) T. Rosenheim.
82 *Tuberculous Coxitis (Tub. Coxitis.) A. Hoffa.
83 *Pathology, Treatment and Prophylaxis of Electric Accidents. (Elekt. Unfälle.) S. Jellinek.
84 Hydrotherapy of Menopause (Hydrother. des Klimakteriums.) A. Zweig.
85 Progress in Military Sanitation. (Militarsanitätswesen.) E. Schill.
86 (No. 12, pp. 449-488.) *Intravenous Strophanthin Therapy. (Intraven. Str.-Taerapie.) H. Starck.
87 Indications in Appendicitis. (App.) M. Jordan.
88 Staining Technic for Pale Spirochete. (Nachweis der Sp. pal.) J. Schereschewsky.
89 Spirochetes in Frambesia (Yaws). (Spir.-Befunde bei Framb. tropica.) M. Mayer.
90 Rock Crystal Tips for Phototherapy of Mucous Membranes. (Bergkristallansätze für Lichtbeh. von Schleimhäuten.) T. Schuler.
91 Rudolf Virchow's Letters Home. (Virchow's Lehr- und Wanderjahre.) J. Schwalbe. Concluded.

81. Isolated Colitis and Sigmoiditis.—Rosenheim has had occasion to observe a large number of cases of a localized acute or chronic inflammatory process in the colon or at the sigmoid flexure. The sigmoid process is generally chronic with occasional acute exacerbations, and the usual symptoms are disturbances in defecation and pains, tenderness of the part affected and thickening of the wall of the intestine to actual tumor formation. The extension of the infiltration over considerable stretches of the intestines speaks against the malignant nature of the process, as also normally shaped stools, showing the absence of stenosis. He describes 5 typical cases to show the various manifestations of the affection. One patient was a man of 63, somewhat "nervous," with arteriosclerosis, who noted a progressive tendency to obstipation, with blood and mucus in the stools, at last, dyspepsia and loss of weight. Gradually the abdominal pains increased in intensity, with, finally, a severe attack of colic, which recurred after three months. The sigmoid flexure rapidly swelled and signs of peritonitis were observed, with transient fever, muscular rigidity on the left side and fetid stools, with pus. The acute symptoms then promptly subsided, and in the course of a few months the whole process in the sigmoid flexure gradually subsided and the intestinal functions returned to normal. The treatment was mainly dietetic, a bland, mixed, vegetable diet, free from residue, bed rest, hot poultices to the side, and daily injections of 100 gm. warm oil. The lack of proportion between the clinical picture and the extent and softness of the tumor were the main points for differentiation of the condition from cancer. In a second case an otherwise robust man noted progressive obstipation and painfulness of the left side of the abdomen. The colon above and the rectum seemed to be normal, while the sigmoid region was evidently the seat of infiltrating inflammation. The wall of the intestine was thickened over a large expanse, as also in the third case related. In this case sigmoiditis accompanied by infiltration of the wall developed with a stormy, acute onset, with fever and great disturbances, subsiding into a chronic phase, manifested by constipation, blood and mucus in the stools and a palpable tumor. During convalescence a drastic purgative brought on an exacerbation, which subsided under treatment, with apparently complete restitution. The restoration of function and vanishing of the tumor confirmed the non-malignant character of the affection. Another differentiating point is the possibility of introducing the endoscope tube for a considerable distance—as far as 40 cm. in one instance. In another case the sigmoiditis was mild, but with recurring disturbances, relieved by appropriate measures—brief cold sitz baths, with brisk rubbing afterward of the entire body until the extremities were warm, and a bland vegetable diet. The sigmoid region now feels normal on palpation. Previous local and internal measures had proved ineffectual. In the fifth case reported a severe inflammatory process in the sigmoid flexure developed on the basis of an old persisting enteritis accompanied by recurring diarrhea.

82. Treatment of Tuberculous Hip-Joint Disease.—This clinical lecture by Hoffa is illustrated and presents the present status of treatment in detail. Even at the best it is very long and tedious with exclusively conservative measures, but his extensive experience has conclusively demonstrated that the ultimate results are much better, functionally, than with operative measures. Prolonged supervision of patients has shown that much greater functional capacity is the rule in later life among those treated conservatively. Even after operation, it is usually necessary that a support should be worn for years to ensure good results. He warns against abrupt measures in treating the contractures and luxations left after the coxitis has apparently healed. They are too liable to fan the almost extinct focus into a flame again. The contracture must be very slowly and gradually corrected. He adds that the greatest progress that has been realized in the last decade is in the technic of dressings and supports.

83. Electric Accidents.—Jellinek has devoted many years of research and experiments to the subject of accidents from electricity. In regard to treatment he advises systematic artificial respiration, with stimulants for the heart, massage, faradization of the heart and neck regions, venesection, injection of camphor, adrenalin, etc. Lumbar puncture is also indicated, as he relates in detail, and is entirely harmless. In the cases in which no results are observed after hours of artificial respiration, it might be advisable, he says, to turn on the current again through the body; the flat, positive electrode is placed over the heart region, the rod-shaped, negative electrode, wrapped in cotton impregnated with salt solution being placed in the rectum. The current is then turned on and off, instantaneously, several times; the heart and vessels in the neck are examined after each application. He has previously reported experiments on animals which showed that it is sometimes possible to start a heart to beating by means of the same current which had previously arrested the heart action. Of course, this heroic measure is indicated only in cases otherwise given up for lost, but future research may justify its application earlier. The patient during all the maneuvers should lie with the head somewhat raised to prevent escape of blood from injured vessels. If the artificial respiration is not done according to the rules of the art it may produce conditions which doom a patient who might otherwise have been saved. An instance of this kind is related. The accident occurred soon after breakfast, and artificial respiration, venesection, lumbar puncture, etc., had all been applied. Autopsy next day revealed that the upper air passages and also parts of the lung were clogged with stomach content and also that the right ventricle was full of air. The latter was undoubtedly due to suction of air through the opening into the vein when the artificial respiration was resumed after venesection. Jellinek warns that the artificial respiration should be suspended during venesection and not be resumed until the opening in the vein has been compressed with a bandage or the vein ligated above. Artificial respiration should be kept up perseveringly

for many hours. The only limit to the time devoted to artificial respiration is the appearance of unmistakable signs of actual death. Many a life might have been saved, he adds, if artificial respiration had been kept up longer. Much and perhaps everything depends on how soon after the accident artificial respiration is commenced. Expectant, symptomatic treatment with strict supervision should be the rule after resuscitation, especially on account of the possibility of sudden development of mental disturbances. Prolonged warm baths with cold applications to the head have been found useful, with bromids in case of agitation. The tendency to retention of urine and feces and to chilliness should be combated, and the skin lesions should be treated conservatively. They may be several months in healing.

86. **Intravenous Administration of Strophanthin.**—Starck announces that intravenous injection of strophanthin allows the drug to act almost exclusively on the heart, while the dosage can be mathematically exact, and the effect on the heart is always amazingly prompt and powerful. Tests with it on animals and in the clinic have shown that this technic far surpasses all other methods in its rapid and energetic tonic action on the heart. He gives the details in 7 cases in which it was used. No by-effects were ever noted, although as much as 2.25 mg. was injected in one case in the course of three days. The average dose was 1 mg., never more than 1.25 mg., at a time. The pulse changes almost at once after the injection, approximating normal characteristics, as also the heart and lung action. One patient was in such an advanced stage of pulmonary edema that the strophanthin was injected as the last resort for an apparently moribund patient, but the injection of 1 mg. of strophanthin induced prompt relief, freeing the lungs and raising the output of urine from 700 to 3,000 c.c. in twelve hours. In another case the urine increased from 300 to 3,000 c.c. in twelve hours. The results were better in the chronic cases. He affirms that his experiences seem to indicate that strophanthin is less toxic than has been hitherto supposed.

Virchow's Archiv, Berlin.

Last indexed, page 653.

92 (CLXXXVII, No. 2, pp. 197-349.) *Acromegaly and Connection with Tumors of Hypophysis. (Akromegalie.) G. Cagnetto.
93 Adeno-rhabdomyoma of Left Lung in Eight-month, Still-born Infant. (Adeno-Rhabdomyom, etc.) R. Zipkin.
94 Myoblastic Sarcoma. (Myoblastisches Sarkom.) H. Kathe.
95 Elastic Tissue in Neoplasms. (Elastische Gewebe in Neubildungen.) G. A. Waljaschko.
96 *Morphology, Appearance and Significance of Lymphocytes and Mononuclear Leucocytes in Gonorrheal Urethral Secretion and the "Ball Nuclei." (Gon. Urethralsekret und Kugelkerne.) J. Neuberger.
97 *Differentiation of Pneumococci and Streptococci. (Dif.-diagnostische Studien über Pn. und Strept.) R. Levy.
98 *Gummatous Pleurisy. (Pleuritis gummosa.) M. Lissauer.

92. **Relation of Acromegaly and Tumors of the Hypophysis.**—Cagnetto writes from Padua to report 5 cases of acromegaly with concomitant tumors in the hypophysis. He also reviews the recent literature on the subject of the connection between the disease and the tumor. The evidence thus accumulated testifies against the assumption that acromegaly is due to excessive functioning of the hypophysis. Cases of acromegaly are known in which there is no hyperplasia of the glandular lobe of the hypophysis, as also cases in which the gland has actually no functioning elements. Tumors of the hypophysis have been encountered which contained abundance of functioning cells, and yet no acromegaly was observed.

96. **Morphology of Cells in Gonorrheal Secretions.**—Neuberger's extensive study of the morphology of lymphocytes, mononuclear leucocytes, etc., in the urethral secretion in numerous cases of gonorrhea demonstrated among other findings that the mononuclear leucocytes were exceptionally active as phagocytes under these conditions, incorporating especially the multinuclear leucocytes which assumed a spherical shape. Gonococci were frequently found in them also.

97. **Differentiation of Pneumococcus and Streptococcus.**—Tests with sodium taurocholate proved the most reliable in Levy's differentiating research on these micro-organisms. Blood-agar and the other media gave contradictory results. He announces that the variety known as *Streptococcus mucosus* is in reality a pneumococcus, and should be designated *Pneumococcus var. mucosus.*

98. **Gummatous Pleurisy.**—In Lissauer's case the numerous signs of constitutional syphilis observed at autopsy and the total absence of tubercle bacilli or tuberculous lesions, confirmed the gummatous nature of the nodular pleural affection.

Sei-i-kwai Medical Journal, Tokio.

99 (XXV, Nos. 8-9, pp. 75-92.) Rat Poisoning: Aortic Aneurism for 17 Years. S. Hara.
100 Two Cases of Epidemic Cerebrospinal Meningitis. Id.
101 (Nos. 10-12, pp. 93-122.) 245 Cases of Typhoid Fever. S. Isasaki.
102 *Carcinoma Among the Formosan People. M. Matsuo.
103 Spontaneous Fracture. T. Miwa.
104 (XXVI, No. 1, pp. 133-134.) Acute Yellow Atrophy in an Infant. M. Karasawa.
105 Results of Vaccination in Japan.

102. **Cancer on the Island of Formosa.**—Matsuo comments on Pagel's statement that he never observed a case of cancer during his ten years of residence in North Borneo; some writers doubt whether cancer occurs in the tropic zone. In Matsuo's own experience on the Island of Formosa he encountered a number of cases of cancer among the natives, and reports of the details of 4 typical carcinomata. The patients were all over 40; none had ever had malaria, or recognizable enlargement of the spleen. In one instance the carcinoma occurred on the foot, starting in an unhealed abrasion of a toe; in 2 cases the breast was the seat of the lesion.

Norsk Magazin f. Lægevidenskaben, Christiania.

Last indexed page 654.

106 (LXVIII, No. 1, pp. 1-104.) Radium. (Om. radium.) E. Poulsson.
107 Pneumotomy. (Pneumotomi.-Helbredelse.) E. Bull.
108 *Fatal Hemoptysis in Pulmonary Tuberculosis. (Dødsfald under hæmoptyse.) K. Thue.
109 *Intentional Subconjunctival Fistula in the Anterior Chamber in Treatment of Glaucoma. (Et nyt princip for glaukomets op. behandling.) S. Holth.
110 Physiologic Test of Digitalis Leaves. (Fysiol. prove af digitalisblade.) E. Wang.
111 *Books in Transmission of Epidemic Disease. (En kvemaepidemil.) A. Hanson.

108. **Fatal Hemoptysis in Tuberculosis.**—Thue states that out of 795 phthisical patients in the public hospital, about one-third had hemoptysis; 447 died in the hospital, death being due to hemoptysis in 13 cases. In 7 of these patients no source for the hemorrhage could be detected. In 8 instances the fatal hemorrhage was the first hemoptysis that had occurred during the sickness.

109. **Intentional Subconjunctival Fistula in Treatment of Glaucoma.**—Holth noticed that the cases of glaucoma in which the classical operative measures had been done with apparently defective technic—leaving a fistula—presented much better functional results later than those cases in which the operation had been done with such perfection that no fistula resulted. He reasoned that the subconjunctival fistula must contribute to this result, and now intentionally makes a fistula in operating for glaucoma. He here describes his technic in detail, with 25 illustrations, and announces that the results of its application in 40 cases have been most encouraging. Vollert's favorable experiences with 4 cases were mentioned recently in these columns.

111. **Transmission of Infectious Disease by School Books.**—Hanson gives the details of a small epidemic of an infectious disease among the pupils in a military school. He noticed that the infection occurred in bunches with certain intervals—corresponding to the return of the sick from the hospital. The lad first infected had been spending a vacation at home where his sister had the disease. No other cases developed until from 3 to 6 days after his return from the hospital to his schoolroom. Then 10 lads became infected and were sent to the hospital; no further cases occurred until about a week after they had been dismissed from the hospital, when another bunch of 5 cases developed. Every precaution in regard to disinfection before dismissal from the hospital and disinfection of the sleeping rooms had been taken with extreme care, but the return of a group from the hospital was always followed by the development of new cases. After this had been noted four times it was found that the lads had taken their schoolbooks with them to the hospital and had used them there and brought them back, without submitting them for disinfection. As soon as this was stopped the epidemic was arrested at once.